



Getting to the root of anesthesia-free dental care

More veterinarians are sanctioning cleanings sans anesthesia. Here's what you need to know. *By Sarah A. Moser*

Despite the fact that the American Animal Hospital Association (AAHA) calls pet dentistry without anesthesia "unacceptable and below the standard of care" and the American Veterinary Dental College (AVDC) has issued a position statement warning against its use, the practice is gaining acceptance in the veterinary community. The result? A wide range of opinions and some strenuous objections.

For one thing, as of Nov. 1, AAHA-accredited practices that don't comply with this standard won't pass their evaluation. For another, the AVDC objects altogether to the term "anesthesia-free dentistry," preferring to call it "nonprofessional dental scaling"—the word "dentistry" is a misnomer, they say. But other doctors say some level of care without anesthesia is better than nothing, and it's at least a step in the right direction. Before making your final call, read on to see what your colleagues have to say about this issue.

It's better than nothing—isn't it?

"I have clients who are completely unwilling to put their pet under anesthesia either from

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How veterinary medicine can *save* the *world*

PART 3: SERVING THE PUBLIC

Natural disasters. Disease outbreaks. Terrorist bombings. When crisis hits, these veterinarians are on the scene. *By John Lofflin*



>>> Dr. Scott Mason (right) and two task force members work on an injured search-and-rescue dog during disaster aid operations after the Moore, Okla., tornado this year.

Scott Mason found his passion in the bombed-out shadow of the Alfred P. Murrah Federal Building in Oklahoma City in 1995. Lorna Lanman heard her passion in the eerie silence of small family farms stripped bare of livestock by foot-and-mouth disease in northern England in 2001. Carrie McNeil found a way to harness her activist spirit through investigating everything from rabies to malnutrition with the Epidemiological Intelligence Service (EIS), part of the U.S. Centers for Disease Control (CDC).

Veterinarians all, Mason and Lanman spend most of their time in private practice, seeing dogs and cats, taking histories, treating disease and behavior problems, working the traditional front lines of veterinary medicine. McNeil has worked in private practice but now does public service work full time. When disaster strikes, when public health is threatened, they're all three packed up and ready to roll. But recently, between crises and disasters, they had a break—and time to talk with *dvm360* about how public service had brought a new passion into the trajectory of their veterinary careers.

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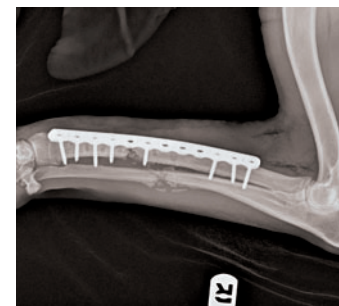
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How veterinary medicine can

save the world

PART 3: SERVING THE PUBLIC

Natural disasters. Disease outbreaks. Terrorist bombings. When crisis hits, these veterinarians are on the scene.

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(913) 871-3821, kreimer@advanstar.com

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Advanstar Veterinary

8033 Flint St., Lenexa, KS 66214 | (913) 871-3800

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Senior Account Manager **Chris Larsen**
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Account Manager **Angela Paulovcin**
(440) 891-2629 | apaulovcin@advanstar.com

Senior Account Manager, Projects | **Jed Bean**
(913) 871-3873 | jbean@advanstar.com

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Contributing Authors | Advisory Board

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WHERE DID I GO WRONG?

| Michael A. Obenski, DVM

The *secret language* of veterinarians

Of all the crazy medical terms out there, none are cooler than the ones that we make up.

I'm always glad to hear from a colleague, and such was the case last week when a classmate of mine from veterinary school called me up. I hadn't seen him since graduation. This isn't unusual, because my attendance at class reunions and homecomings would have to improve greatly just to be bad.

At any rate, Vern Acular and I were pretty close at one time, and I was anxious to hear what had prompted him to get in touch after all these years.

"Mike," he said. "It's that silly column you write. There's a subject that you ought to address, but I just never seem to have time to get in touch. Even today, we're having a campout, but I decided to call anyway."

"Hold it, Vern. You lost me already. What do you mean you're having a *campout*?"

"Oh, that's a term we use in my office, Mike. Rough days are called campouts because they're *in tents*."

"They're *intense*? I get it, Vern. You always did have a way with words. What is it that you want me to write about?"

"Like I was saying, Mike, right in the middle of the campout, my receptionist informed me that my next patient would be hard to handle—a real circus dog."

"Stop the music again, Vern. You keep going too fast for me. What do you mean by *circus dog*?"

"That's another one of our hospital code words. It means that the dog is vicious."

"I don't get it."

"The pooch will go right for the *juggler*."

"OK, Vern, I'm with you so far. Now, what would be important enough to tear you away from a circus dog at a campout and compel you to call me? If you had a morsel of free time, I'd have thought that you'd use it to make up silly new hospital terms."

"That's just the point, Mike. Every hospital creates their own in-house jargon. We should be sharing it. Don't you have examples from your hospital?"

I had to admit that we often speak our own private language in my office. For example, a technician might come to me and say, "The Smith Kool-Aid cat is at high tide, but there are no whales on the beach."

This simply means that the Smiths' cat, who happens to be suffering from anemia, is urinating OK, but there are no stools in the litter pan. (We call anemic patients Kool-Aids because I tell clients that their pet's blood is supposed to look like tomato juice, but instead it more closely resembles Kool-Aid.)

"That's exactly the type of thing I'm talking about," said Vern. "We veterinarians have a language all our own. We should ask our colleagues to send in examples, and see what sort of clever responses we get."

I told him to consider it done and now I invite you to send your veterinary clinic's made-up terms and phrases to dvmnews@advanstar.com. Vern's call reminded me that it's been a year since I told you that my friend, Arnie, was already working on a new veterinary medical dictionary. Here are some recent additions:

Mr. Clean: This is a Q-Tip with no cotton on the end. These are not commonly encountered unless you have a nasty cat in one hand and your last available Q-Tip in the other. It becomes problematic when you put a normal applicator into some orifice of the cat and a Mr. Clean comes out.

Can'ticillin: This is the small amount of antibiotic that's too little to shake up and draw from the bottle but too much to throw away. As your practice becomes more successful, a larger amount of can'ticillin

disposal becomes acceptable.

Kilimanjaro: This is the large pucker of skin that occurs at the ends of large irregular incisions. If you cut the extra skin away, the incision length quadruples.

Hemastuff: This is the blackish grunge that forms in the little grooves of a hemostat. Just as the steam sterilization indicator tells you that proper autoclaving has been accomplished, the presence of hemastuff indicates that someone on your staff is getting lazy. In my practice, it means that the technician was off the previous day, and the doctor was supposed to clean the instruments.

Yesterday, I called Arnie to ask if he had any more veterinary terms for me.

"I'm just too busy and tired to even think about that now, Mike," he said. "I'm *exhaustipated*."

This is, of course, the term to use when you're too tired to give a poop. **dvm360**

Dr. Michael Obenski owns Allentown Clinic for Cats in Allentown, Pa.





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Circovirus not considered main cause of mystery illness

Researchers seek explanation for canine cases in Midwest. *By Julie Scheidegger*

Right now, researchers know what the mystery illness isn't. The primary cause is not canine circovirus. However, that doesn't rule out testing for circovirus and possible coinfections in the hunt for a diagnosis.

The April release of a paper focused on canine circovirus published in *Emerging Infectious Diseases* and subsequent reports of an undiagnosed illness in Ohio dogs possibly related to

Diseases paper are doing circovirus research. "We share our samples—we split them and share them—so that everybody can be working on this to get a diagnosis as quickly as possible," Forshey says. "We're still uncertain of what the primary cause is."

Presently, the only consistent clinical signs associated with the recent illness are vomiting and bloody diarrhea, which could have a wide range of contributing factors. Researchers are first working to rule out common causes. Forshey says they've done that with the Ohio cases. "Not many gut lesions, intestinal tract lesions, just the bloody diarrhea," he says of the afflicted dogs. "We don't think there's a lot of gut damage being done."

It's a primary cause that is eluding them. "At this point in time we're actually looking at the possibility—a very distinct possibility—that this is a coinfection, not just one organism. It may be viruses, it may be bacteria, those sorts of things, but one thing that is unique is this vasculitis," Forshey says. "For example, one of the dogs actually had serum oozing through the gum tissue. It was very severe damage to the vascular system."

"One of the other dogs also had skin loss along the top of the loin area along the thoracic vertebrae back into the lumbar vertebrae due to lack of blood supply due to this vasculitis," he continues. However, some dogs have had vasculitis and some have not.

A spokesperson for the Ohio Department of Agriculture says that despite present uncertainty around the illness, canine circovirus has been ruled out as the primary contributor of the illness or as the cause of death in four dogs in the state.

Mullaney says all they can say about the role of canine circovirus at this point is that "it potentially might have been involved." He says the bigger question is, does circovirus play a role in the illness when circo-positive dogs also test positive for another infection? Both

samples testing positive for circovirus at the Diagnostic Center in Michigan also tested positive for coinfection.

Matti Kiupel, section chief for the Diagnostic Center's pathology laboratory, encourages veterinarians to do a full diagnostic workup on the samples they submit—not just a circovirus test. "In order to link circovirus to the cause of a disease process, a full diagnostic workup (including a postmortem in the case of deceased animals) is essential," Kiupel says in a release. "This also allows diagnosticians and pathologists to identify the full spectrum of infections and/or diseases that are present in a specific case."

The Diagnostic Center is currently working on an in situ hybridization (ISH) technique. ISH is a method that uses DNA or RNA probes to detect virus in microscopic lesions. "What we're looking for in some of the lesions—is there something comparable?" Mullaney says. They are looking for evidence of vasculitis or evidence of necropsy or infection in lymph node tissue, for example. They are looking for any connection to porcine circovirus. "Anything that looks like that would be key for us," he says.

In the meantime, he doesn't want veterinarians to let pet owners panic. "The number one thing they really need to do is calm their clients," he says. Mullaney encourages veterinarians to do a thorough environmental and diagnostic workup on patients exhibiting clinical signs possibly linked to the illness. "Investigate all of the common causes—of which there are many—so you are not missing the common things," he says.

Mullaney and the Ohio Department of Agriculture say there is no indication the illness is spreading. At the same time, he acknowledges that what they know now may change in the future. Mullaney is confident that a diagnosis will be found soon. "My guess is we'll get to the bottom of this in a matter of weeks." **dvm360**



circo prompted the Diagnostic Center for Population and Animal Health at Michigan State University College of Veterinary Medicine in Lansing, Mich., to take steps to add canine circovirus to its testing catalog. While still in the very early stages of testing, Thomas Mullaney, MVB, MS, PhD, director of the Diagnostic Center, says as of Oct. 7 canine circovirus has been found in two dogs in Michigan.

But really, he says, a positive circo test tells investigators nothing. In the study published in *Emerging Infectious Diseases*, both healthy and ill dogs tested positive for circo. In fact, out of four ill dogs in Ohio, only one tested positive for circovirus.

Tony Forshey, DVM, state veterinarian at the Ohio Department of Agriculture, said in a recent podcast that the original samples from infected dogs in Ohio were being tested at the University of California-Davis, where authors of the *Emerging Infectious*

Find it all here.
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Zoonotic element?

Lindsay Ruland, DVM, owner of Emergency Veterinary Hospital in Ann Arbor, Mich., is looking for proof the mystery illness she continues to see in her clinic could be zoonotic. dvm360.com/mystery.

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Robbery gone wrong: Teen gets stuck in veterinary hospital's HVAC

19-year-old spends 11 hours in ventilation system before employees find him stuck the next morning. *By Andrea Hewitt*

On her day off, Sept. 16, Barbara Clingman, practice manager at Small Animal Hospital in Milwaukee, was at her house an hour away from the clinic when she got a frantic call from her employees. For the first 40 minutes of the staff's shift, they had dismissed sounds thought to be from children playing across the street. Then one



Shane H. Ray

employee went into the bathroom and heard someone screaming, "Help!"

Ten employees searched for the source of the sound to no avail, so they called 911. The police found 19-year-old Shane H. Ray trapped in the recovery unit of the building's ventilation system.

The fire department cut Ray out of the ventilation unit. Trapped for roughly 11 hours, he emerged naked and bleeding. "He climbed on the roof at 9 p.m. the night before, took his clothes off and climbed in our ventilation system to try to steal morphine and ketamine," Clingman says. "But he got stuck and we found him in a three-foot-by-two-foot space."

Clingman says Ray headed one way, but the shaft narrowed and he turned around. He then fell 10 feet through the ventilation system to the ground level in the recovery unit. "There's a halo of three-inch screws every four feet in the ventilation so he came out with a lot of scratches," Clingman says.

Ray inflicted quite a bit of damage to the ventilation system, which Clingman estimated at more than \$5,000. "He had a claw hammer and a flashlight and tried to claw his way out with no success," she says. "If he'd hammered on the other side, he probably would have gotten out." She says Ray panicked "like a squirrel caught in a box."

Clingman says the experience was unnerving for the staff, but they did learn from it. From now on, Clingman says she'll keep some controlled substances in a safe, so if someone does break in—say a more successful naked 19-year-old—the clinic won't be caught with its pants down. [dvm360](#)

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Dr. Pol captures record-setting ratings

Commenters on *dvm360*'s Facebook page rate 'old-school' veterinarian subpar.

The fourth season of *The Incredible Dr. Pol* premiered Aug. 17 on Nat Geo WILD and, according to Nielsen Media ratings, the show continues to be the cable channel's No. 1 series. And the episode that aired on Sept. 14 apparently set the highest rating in Nat Geo WILD's history.

The website TVbytheNumbers.com says the episode more than doubled the network's Saturday night average delivery, with an average of 776,000 viewers. Viewers tuned in to watch Dr. Jan Pol, DVM, and his nonveterinarian son, Charles, deal with an emergency calving with a heifer out in the pasture. Later in the episode, associate Brenda Grettenberger, DVM, treated piglets with pneumonia.

Never shown on the reality series was Pol's 2012 probation involving a pregnant 8-year-old German shorthair patient in 2010. The Michigan Department of Licensing and Regulatory Affairs Bureau of Health Professions Board of Veterinary Medicine found that Pol had failed to accurately read a canine ultrasound, appropriately treat the patient and to maintain



Dr. Jan Pol

and ensure that his staff kept adequate documentation of telephone calls, treatment records and recommendations to record an appropriate case history. He was required to complete continued education regarding small animal reproduction and ultrasound techniques and interpretation. Grettenberger was also placed on probation for the same incident. At the time of Pol's suspension, three of the four veterinarians at Pol Veterinary Services in Weidman, Mich., were on probation including Eric Gaw, DVM, (disciplined for a separate incident) who does not appear on the reality show. All have since met the requirements of the state's disciplinary actions.

Pol told *dvm360* last year that he plans to continue doing the show for the foreseeable future. "You see how many people love the show and learn from it, especially the children," Pol said.

But many veterinary health professionals and animal welfare groups dislike that Pol is seen as the televised face of veterinary medicine. They have been outspoken on blogs and other outlets about his approach to veterinary practice, termed "old-school" by Nat Geo WILD. Pol says as long as his patients are pleased with his work and that of his associates, he doesn't worry about his critics. "I let them blow off," he says. **dvm360**

Informal Facebook poll on Pol

👉 He and his show are an abomination and a blight on our profession. —Mike Paul

👉 The only time I would ever tune in would be to see what NOT to do. —Kelly Czech Tarrido

👉 That is not real life veterinary medicine. Patients still awake for surgical procedures? Our patients only receive the best care. Just like a human hospital. This is 2013 ... not 1983. I feel sorry for his patients and their owners. —Laura Vezina Gayle

👉 I can't watch. Misinformation, poor diagnostics, poor practices. Sets veterinary medicine back 40 years. —Brent Varriale

👉 Though he may be out of date, I still find the show highly entertaining. It is also refreshing to see a veterinarian not really looking down on a fellow colleague and instead treating him with respect while he offers his opinion. —Casey Curtis

👉 Dr. Pol seems like a nice enough guy but he needs to attend some continuing education classes! I watched a few episodes and, as a vet who DOES attend CE, I could not believe some of the stuff he does! —Susan Nelson

👉 Dr. Pol's medical practices are subpar and barbaric. His license should be pulled. —Catherine Holly

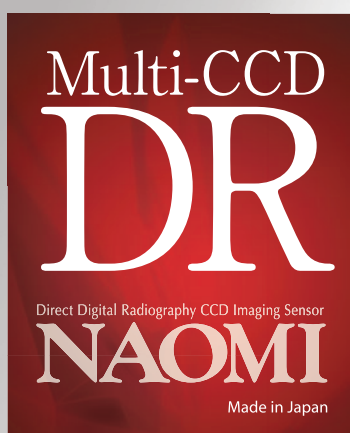
👉 There's enough breeders and groomers that think they know veterinary medicine more than the up-to-date veterinarians. Let alone this HACK making money on TV. Gives veterinary medicine a bad name ... hate this show. —Jennifer Pihajla-Drescosky

IN BRIEF | News Vaccine workers excepted from federal shutdown

The shutdown of the federal government Oct. 1 held up animal vaccine approval and distribution for a short time.

The Center for Veterinary Biologics, part of the U.S. Department of Agriculture, is responsible for verifying animal vaccines and releasing them into the marketplace. The American Veterinary Medical Association warned that a prolonged shutdown could endanger herd health, food safety and public health.

Not long after, U.S. Rep. Kurt Schrader, DVM, called Agriculture Secretary Tom Vilsack. "I'd like to think me and the AVMA pushed them to make a common-sense decision," Schrader told *dvm360*. By Oct. 8, Sec. Vilsack deemed CVB employees who approve vaccines to be "excepted" from furlough. **dvm360**



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¹ Negre A, Bensignor E, Guillot J. (2009). Evidence-based veterinary dermatology: a systematic review of interventions for *Malassezia* dermatitis in dogs. *Vet Dermatology*. 20:1-12.

² Mueller RS, Bergvall K, Bensignor E, et al. (2012). A review of topical therapy for skin infections with bacteria and yeast. *Vet Dermatology*. 23:330-341.

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NEWS | Cover story

Anesthesia-free dentistry

> Continued from page 1

fear or due to a severe cardiovascular disease that makes it higher-risk,” says Stephanie Sur, DVM, associate at The Whole Pet Vet Hospital and Wellness Center in Los Gatos, Calif. “For those patients, it provides a way to give some oral care, which in my opinion is better than no oral healthcare at all.”

Sur has worked with Pet Dental Services, a fast-growing company that provides pet owners with an anesthesia-free option. The company works with a network of about 300 veterinary practices (it started in 2006 in California with about 10), offering its services within veterinary clinics. Sur has personally worked with anesthesia-free dentistry since 2003 and for two years at her current practice. She also has recently co-authored a study on the effectiveness of non-anesthetic dentistry (see “Study on professional outpatient preventative dentistry,” ivcjournal.com/research-studies).

“My clients have responded very well to this option,” she says. “Some sigh with relief that they don’t have to spend hundreds of dollars for an anesthetic procedure. Others are relieved because we have removed the fear of anesthesia.”

Sur has had patients come from other area clinics just for this service, and her waiting list is long. She says clients trust that she won’t recommend a more expensive anesthetic procedure when she deems an anesthesia-free option appropriate for that pet.

And that’s another reason some doctors support this growing trend: It costs less, which

means more clients are willing to spring for it. That increases compliance and ancillary services, proponents say—plus, many clients do opt for anesthesia-required procedures if their pets’ needs are beyond the scope of what an anesthesia-free cleaning can address.

For George Zafir, DVM, an independent general practitioner in Lake Worth, Fla., non-anesthetic dental cleanings have provided a whole new revenue stream. “Here we have an independent third party that charts the pet’s mouth and discusses issues they find with the client, in detail,” he says. “This alerts pet owners to potential problems and gives us a chance to promote oral care products.”

This so-called halo effect has been good for Zafir’s business. For the last seven years, he has seen 12 to 14 patients a month for non-anesthetic dental cleanings at \$200 each. He says many of those clients wouldn’t otherwise pay for a dental with anesthesia. “We can do a non-anesthetic at less risk or cost until we are to a point where that is not the appropriate way to deal with that mouth,” he says. “I offer it as an adjunct service, an alternative that gives us a competitive edge over other veterinarians. It’s not my first option, but it’s a good option.”

Weighing the risks

On the flip side, Brett Beckman, DVM, DAVDC, DAAPM, says non-anesthetic cleanings do get clients to comply when otherwise they might not, but that’s not good enough. “Without radio-

Non-anesthetic dentistry pays: But at what cost?

Offering dental prophylaxis without anesthesia gets clients in the door. The service offers an alternative for those who can’t afford anesthesia or who are fearful of it. It opens the doors of communication and accustoms clients to the need for dental care. No one can argue with those claims. They bring in business, and they may ostensibly enhance pets’ dental health.

But what happens when patients that have had non-anesthetic cleanings develop a problem? “At least once a week I see a client whose pet had non-anesthetic dentistry done come in with a pocket or problem with a tooth,” says Kate Knutson, DVM, owner of Pet Crossing Animal Health and Dental Clinic in Bloomington, Minn. “They wonder how dental problems are possible when they’ve had their pet’s teeth cleaned just a few months ago.”

She says she can quickly see that the problem has been there for years, even though the outsides of the teeth look attractive. “The teeth look nice and white on the outside, but a more thorough exam and radiographs tell a different story,” she says. The problem she faces is how to tell clients that less-than-stellar care has contributed to health problems when clients think

they’ve been doing the right thing.

One of the most poignant cases Knutson has seen involved a cat that had been receiving non-anesthetic cleanings every six months for some time. The owner had complained to a friend that her cat’s breath still smelled terrible. The friend referred her to Knutson.

“When I finally saw this cat, it was trembling, obviously scared,” Knutson says. “The owner told me she had swaddled the cat in the past to calm her down, thinking it was a good thing. I took one look at the cat’s mouth and saw obvious tooth resorption. The cat was refractory, didn’t want her face touched, and became almost catatonic when touched.”

Ultimately, under anesthesia, Knutson found that 23 of 30 teeth had resorptive lesions. That’s what it took to make this cat owner a firm believer in anesthetic dentals.

“When I listen to non-anesthetic proponents talk, it sounds beautiful to me, all the flowers and birds and happiness,” Knutson says. “But dental care is terrifying to the pets, and we just can’t do a good job with the pets awake. Their cortisol levels rise from anxiety, and we just can’t see all that’s going on below the gum line.” **dvm360**

graphs, the cleaning is cosmetic only,” says Beckman, past president of the American Veterinary Dental Society. “If disease is present, which in almost all cases it is, then it does little to no good for the patient and wastes valuable client resources that could be used to actually help the pet with a thorough evaluation, radiographs and treatment. We see a tremendous amount of disease that is severe that we never detect on oral exam.”

AAHA and the AVDC, along with many others in the veterinary community, agree that the procedure isn’t thorough enough, could cause more damage and does a disservice to patients—and to their owners, who think their pets’ teeth are getting cleaned at an appropriate level.

“A thorough dental procedure includes a tooth-by-tooth exam, tooth mobility tests, probing and radiographs,” says Jan Bellows, DVM, DAVDC, DABVP. “This just cannot be done without anesthesia. Sixty percent of the tooth is located under the gum line, you can’t see pathology without radiographs, and dogs and cats can’t tell their dentist where the pain comes from. Dogs and cats have to suffer silently, and we can’t thoroughly assess their dental health without anesthesia.”

Dental experts also worry about a pet aspirating dental tartar or calculi and other debris produced during cleanings without the use of an endotracheal tube during anesthesia. “I think the non-anesthetic dental companies prey on clients’ fear of anesthesia,” Bellows says. “Fortunately, due to advances in anesthetic protocols, the risk is minimal.”

Proponents of non-anesthetic cleaning, however, say the risk of aspiration during cleaning is a nonissue because a pet’s gag reflex will provide protection. And as for the cleaning being less than thorough, Sur says, “My 12-year-old dog has had her teeth cleaned without anesthesia twice a year since she was 2 years old. She has never developed subgingival pockets or major calculus buildup and has never required an extraction. I never saw a lingual side that was missed or a tooth that was unpolished. They are able to get under the gum line comfortably, but just like humans, if deep root planing is needed, this should be done with anesthesia.”

As the saying goes, it appears some members of the profession will have to agree to disagree on whether non-

anesthetic cleanings are a good idea. AAHA and the AVDC have posted their views on the issue, and AAHA practices that don’t comply can lose their accreditation. This has also been a political issue in California and other states in recent years, with veterinarians working to make or keep it illegal for nonveterinarians to perform dentistry on pets. However, many veteri-

narians are bringing the service under their hospital roof where they can supervise to comply with the law.

“I know these companies say they promote anesthetic dentals as well, but I have seen the opposite,” says Bellows. “I’ve seen animals that had their teeth cleaned this way for years ultimately present with a mouth full of hurt.” **dvm360**

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> Continued from page 1

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When Scott Mason, DVM, EMT, tries to remember all the deployments across his 18 years of crisis response, he can't do it. He rifles through the names of hurricanes and tornadoes when he realizes they are all starting to blur together. The first, however, is stamped uncomfortably in his mind—so much so that he thinks he suffered a mild case of post-traumatic stress from it.

On April 19, 1995, Mason had just begun seeing clients in his small animal clinic about 10 miles from downtown Oklahoma City. At 9:02 a.m., the front windows rumbled. He stepped outside and looked to the sky, thinking a sonic boom may have caused his building to shake. It wasn't a sonic boom. It was the work of a domestic terrorist who had parked a rented Ryder truck in front of the Alfred P. Murrah Federal Building and set off a fertilizer bomb that ripped the concrete and steel structure into the street, killing 168 people, including 19 children.

In minutes the story broke on television. The news reporters were asking residents to stay away from the site where rescue crews were busy searching mountains of concrete for survivors. “I’m a guy who always follows the rules,” Mason says. “So I stayed away.”

But two days later the state veterinary association issued a call for volunteers. “Boy, I was like, ‘Sign me up,’” Mason says. “I grabbed tons of stuff off my shelves and rushed down there. We had to go through some processing and we got some makeshift badges and we went onto the site to connect with the search and rescue groups. I only remember treating one laceration while I was down there and one case of dehydration—I gave some fluids.

“But it was an eye-opening event,” he continues. “It grabbed that passion in me to help. Maybe some of it was a little rush of adrenaline, I don’t know. But it sparked something.”

It also slapped him in the face. Mason was walking back from the ruins of the federal building to one of the peripheral work sites at about 2 a.m. during one of his night shifts. He had, of course, noticed the orange spray paint investigators used to mark places where evidence had been found.

“I was walking back in the eerie glow of the building, which was lit up, and I

looked down and saw a spray painted area where they had found just a part of somebody,” he says. “You just break down at a moment like that because the impact suddenly smacks you in the face. The whole thing just seemed incredibly sad.”

Since that night in 1995, Mason has observed plenty more disaster. “I’ve been through enough now that most of this stuff I’ve seen before,” he says. He compares the experience to veterinary practice, where doctors perform euthanasia regularly but learn to bury their heads and keep going. That doesn’t mean he’s immune.

On May 20 this year, an EF5 tornado whirled into Moore, Okla., with winds up to 210 mph, and, of course, Mason and his National Veterinary Response Team (NVRT) were deployed in the search and recovery effort. On their second day in Moore they were dispatched to the Plaza Towers Elementary School site. They had worked all night Monday and all day Tuesday and were exhausted when they walked through the shattered walls of the school where seven children had died.

“As we entered into where it was pretty much obliterated, I looked off to my left,” Mason recalls. “One wall of this one classroom was still standing. It still had the hooks on the wall and some of the kids’ backpacks were still hanging up there.

“It was one of those moments where—*bang!*—it just hits you upside the head,” he says. “It was the hardest I’d been hit mentally since the Murrah bombing. I’ve got two daughters. You know what’s happened right where you are and it just breaks your heart. It breaks your heart.”

But it didn’t slow him down. Mason is a passionate advocate for the place of veterinarians in disaster preparedness and response. “Sometimes people say, ‘We’ve got to focus on saving people ... don’t worry about the animals,’” he says. “What I explain to them is that animal issues become people issues. There have been several studies showing that people will put themselves in harm’s way readily for their animals. I saw a television clip of a roadblock during a California wildfire where a ranch owner pulled up with his truck. The officers told him he couldn’t go in. He said, ‘Well, you’ll have to shoot me then,’ and got back in his truck and went in after his horses.”

Silence of the lambs

Lorna Lanman, DVM, discovered her passion for public service after she retired to Sun City, Ariz., in 1995. Actually, “retired” isn’t the right word, although that’s how she describes her life since selling the three practices she owned in Illinois for more than two decades. Four years after “retiring,” she was on a Veterinary Medical Assistance Team—a program run by the American Veterinary Medical Association—and deployed to Houston for Hurricane Floyd. That was followed by hurricanes Katrina and Rita, several wildfires in the Southwest, the World Special Olympic Games in Alaska, the Democratic National Convention in Los Angeles, an avian influenza outbreak in the Shenandoah Valley of Virginia, and Sept. 11, 2001, in New York City.

On April 25, 2001, foot-and-mouth disease (FMD) brought Lanman across the sea to the north of England—the source of a world outbreak. The USDA didn’t just send her to help manage FMD in livestock, though she did plenty of that. They also wanted her to report on the effects on people: farmers, volunteers, public health workers, veterinarians. Should an outbreak occur in the United States, they wanted to be ready.

“I grew up on a farm in Illinois and I know how attached we were to our animals,” Lanman says. “One farmer told us he milked his cows and turned them out, and one cow came back and stuck her head in the door and bellowed at him. He wondered what was wrong with her, so he let her come back in and she went to her stanchion. He got his thermometer out and stuck it up her rectum and she had an elevated temperature. He got scared. He went around to look in her mouth and he said it felt like he was walking a mile to get around her. When he opened her mouth and saw that lesion, he told us he just cried.”

According to her written account, Lanman and the other veterinary volunteers were issued Tyvek suits, waterproof rubber suits to wear over the Tyvek, rubber gloves, rubber boots, cell phones, GPS units, surgical supplies and waterproof notebooks, all fitting the highly contagious nature of the disease that paralyzed the nation. The British government was so worried about the spread of FMD that

roads were cut off through the north, causing the Lake District to lose its entire tourist season.

In fact, the economic damage from the U.K. outbreak was estimated at \$12 billion, according to a University of Newcastle study. The tourism industry alone lost \$390 million, according to the BBC. The economic role

of veterinarians in a foot-and-mouth disease crisis can’t be underestimated. A 2001 article in *Science* suggested that during the first two months of the outbreak, a one-week delay in diagnosing the disease can cost a nation \$1.7 billion dollars.

As staggering as they are, the numbers don’t capture the nature of

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>>> Dr. Lorna Lanman rescues a dog from a home after Hurricane Katrina hit the Gulf Coast.



Lanman's work in England. "One day I helped them put a thousand lambs to sleep and 200 ewes," she says. "Then we went to another farm and put 200 head of cattle to sleep. They had 10 million animals total killed off. That's a lot of carcasses. There was blood in the water supply. The pyres on the farms put toxic smoke in the air."

The human toll was devastating as well. The farmer Lanman described who cried after finding his first lesion was racked with guilt, she says. He knew he had to call and report what he'd found, so he did. The authorities came and killed all his livestock. Then they visited his neighbors as well.

"One guy hanged himself," Lanman recalls. "He felt guilty that he had brought the virus home to his family's farm and then all the farms around their farm got taken out. He was guilt-ridden and he hung himself. And he was a young guy."

"One farmer told me what they hated most was the silence when all the lambs were gone," she continues. "You drove through that northern area where all those farms were and there was just nothing out in the field."

The month Lanman spent in England, she says, helped prepare her for the 9/11 deployment. She thinks the foot-and-mouth outbreak made her a stronger person—but not a hardened person. "As veterinarians, we deal with life and death every day," she says. "We do our job as best we can."

Her job in New York after 9/11 was to care for search dogs sifting through a landfill full of debris from the World Trade Center. She set up a veterinary clinic on the site to care for and decontaminate the teams of recovery dogs busy searching the rubble for human body parts. The parts those dogs found resulted in the identification of 300 people.

As if all that action—and more—weren't enough, Lanman started a mobile practice in 2004 in Arizona, then moved into a building in 2007. "I actually did retire in 1994," she contends. "I planned to play a lot of golf." Instead, she's doing things like trapping cats after the Moore, Okla., tornado this summer. One family came through looking for their cat during the day and she trapped it that night. "People who lose their home also lose their pets," she says. "It's a great feeling when you can reunite them."

"There's no problem too big if you get the right people together"

This summer Carrie McNeil, DVM, MPH, found herself at a big-city grocery store where the aisles were bursting with fresh fruit and vegetables, fresh meat and chicken—healthy food everywhere. It may not have seemed unusual to the average U.S. shopper, but McNeil was brought up short.

She had just completed a visit to the Navajo Nation as part of a CDC team addressing tribal leaders' concerns about the rising tide of obesity and diabetes among the Navajo population. "We literally went to every convenience store and trading post in every tiny town around the Navajo Nation and looked at the food options," McNeil says. What she and the other researchers found was a lack of options for healthy food.

"[Navajo leaders] recognized the need and I don't think there was any trouble getting evidence," McNeil says. But solutions are more difficult than gathering proof of a problem. "Sometimes the easiest way to get healthy food is for people to just grow their own, raise their own livestock to eat and their own vegetables. I'm not sure what their policies will include, but it will be interesting to see."

McNeil says the CDC's Epidemic Intelligence Service teams are invited by cities, tribes and even countries to investigate potential health problems. She was deployed with this team because she'd worked with other tribes in New Mexico and also because she's a veterinarian, even though the trip involved no specific veterinary medicine.

"We have expertise in food availability, food security and food safety," she says. "Those are areas where veterinarians can play a huge role. We're trained in this. Even if you're a small animal practitioner, you receive some training in the food animal production world. We all took food safety training. It's something that impacts every person and every animal. In this case it was partly a matter of understanding how the food system works and how the agriculture system works. Hopefully that helped me supply some additional insight into the project."

Currently McNeil is transitioning to a new position with Sandia National Laboratories' International Biological Threat Reduction program, which

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>>> Dr. Carrie McNeil, MPH, in New Mexico with the family dog, Joe Friday.

focuses on global biosecurity. Before joining the EIS, she spent four years working as an emergency veterinarian in New Mexico, California and Georgia. “You see so much in emergency medicine where you say, ‘This is something I could be preventing,’” she says. “I was really interested in preparedness, and much of that is really a

public health focus. So I went back to get my public health degree.”

The public health arena actually helps McNeil close the loop on her longstanding interest in public policy, a thread woven throughout her veterinary education and her career. In 1997 she was a Jesse Marvin Unruh fellow in the California State Assembly working for one of her mentors, Assemblywoman Shiela Kuehl. Her undergraduate biology degree distinguished her from the attorneys in the legislature when it came to science and health issues. She worked on women’s health, environmental health and animal health issues, among others. During veterinary school at the University of California-Davis, she took a yearlong hiatus from her studies to work with Kuehl again, this time in the California State Senate.

In veterinary school she was smitten by the work students and faculty were doing at UC-Davis in the Wildlife Health Center. The idea of ecosystem management fit well with the policy work she’d been doing legislatively.

“I was always interested in the One Health aspect of veterinary medicine and after graduation I worked on some water quality, environmental health, and ecosystem health issues from a nonprofit perspective,” she says. “But I really missed working one-on-one with animals and clients. So I went back and did an internship at VCA in West LA, which is where I got my training in small animal medicine and my interest in emergency medicine.”

McNeil sees a connection between working with animals in veterinary practice and ecosystem management. “Water-quality testing is similar to testing the blood of an animal,” she explains. “It’s your diagnostic tool to look at the health of the waterway.” The major connection for McNeil is the role public policy plays, which brings together her veterinary training and her desire to work on problems at their political source. Her EIS work is like a river fed by all the streams of her working life.

“I feel really fortunate that I’ve had these opportunities,” she says. “Public health has been a great way personally for me to bring together my policy interest and human health interests and animal and environmental health interests. And, just like in clinical practice, you don’t know what you’re going

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²Kruger JM, Lulich JP, Merrills J, et al. *Proceedings*. American College of Veterinary Internal Medicine Forum 2013.
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to see day to day.”

McNeil has been called to investigate foodborne illness outbreaks, respiratory disease outbreaks and norovirus outbreaks. She’s investigated the prevalence of whooping cough in New Mexico. She’s presented a paper on the diversion of controlled substances in New Mexico and the potential connection to prescription overdose deaths. She’s helped investigate and manage a rabies outbreak in southern New Mexico in which more than 100 unvaccinated exposed pets had to be euthanized and 29 people had to receive post-exposure prophylaxis.

“At the most basic level of diseases, all of our Class A bioterrorism agents, except for smallpox, are agents that affect people and animals, and many of our infectious diseases affect people and animals,” she says. “So that’s always been an obvious connection to me. Once you get into the food system, food availability, general public health and well-being, you find a lot of areas where veterinary medicine can play a role in improving human health.”

Preparedness policy, for example, requires the combined efforts of experts in human hospitals, veterinary hospitals, transportation, food access and a plethora of other areas. And while many people are cynical about

the possibility that today’s divisive policymakers can work together for effective solutions, McNeil says with a chuckle that she is not.

“The policy work I did taught me the importance of bringing different players together,” she says. “At the end of the day, more often than not, you really can get people to come to the table and

work together. I’ve seen it work. The problems are too big for people not to work together and figure things out. There’s no problem too big if you get the right people together.” **dvm360**

John Lofflin is a freelance writer in Kansas City, Mo., with extensive experience writing about the veterinary profession.

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Too narrow a view of veterinary medicine?

One prominent public health official says there are too few veterinarians interested in public service—or pretty much anything beyond companion animal medicine. Are these assertions fair? Find out at **dvm360.com/publicservice**.

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Excess veterinary schools won't help the 'excess capacity' problem

After seeing the alarming stats in 'The graduation situation' (September 2013), this reader can't believe the profession is considering more schools.

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Like most practicing veterinarians, I have been keenly aware of the "excess capacity" in our profession that has (at last!) been formally recognized by the American Veterinary Medical Association (AVMA) 2013 Veterinary Workforce Report.

I have lived and worked in northeast Broward County, a predominantly affluent area of south Florida, for the past 27 years and the changes I have seen in our profession in the last decade are a stark contrast to the 17 years that preceded them. During those first 17 years, the number of practices in my area approximately doubled. This wasn't from population growth—the east side has been built out long ago—the new practices represented, as far as I could tell, an increased demand for veterinary services.

Rarely did a veterinary practice close. If it did, it was usually because the real estate was worth more for an alternate purpose. There were almost always practices looking to add an associate veterinarian and I virtually never received an unsolicited veterinary job application.

What happened to veterinary medicine

In the past eight years, however, I have seen six practices close within a 10-mile radius of my primary office. I personally know of a few more that are barely hanging on financially and others that would happily consider merging with another practice (to hopefully improve profitability and quality of life) if the opportunity became available.

Our neighborhoods have not deteriorated and, for the most part, the real estate crash has rebounded, as has the economy in general. The demand for veterinary care, though, has dropped significantly with no expected recovery in sight. I receive random résumés in the mail every month from veterinarians anxious to find a job. I hear similar stories from veterinarians in other parts of the country. Some situations

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¹ Straubinger RK, Chang YF, Jacobson RH, Appel MJ. Sera from OspA-vaccinated dogs, but not those from tick-infected dogs, inhibit *in vitro* growth of *Borrelia burgdorferi*. *J Clin Microbiol*. 1995;33(10):2745-2751.

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³ Probert WS, Crawford M, Cadiz RB, LeFebvre RB. Immunization with outer surface protein (Osp) A, but not OspC, provides cross-protection of mice challenged with North American isolates of *Borrelia burgdorferi*. *J Infect Dis*. 1997;175(2):400-405.

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sound a little better but many seem to be quite a bit worse.

A multitude of factors are contributing to the decreased demand and have been identified and discussed at great length. It boils down to essentially two things: decreased discretionary pet owner income and increased opportunity to obtain veterinary services and products outside of traditional veterinary practices at a perceived lower cost. These are both issues that I feel will never go away.

Misleading statements in the classroom

I know that there are many industries like ours struggling to adapt to the new economic reality. However, I don't know of any other industry that—in the face of clear “excess capacity”—would decide to increase the number of new graduates and open more schools. Seems rather silly, doesn't it?

This fall, my daughter started her freshman year at Purdue University School of Veterinary Medicine. Since she was knee-high, she wanted to be a veterinarian like her father and I am proud that she chose to attend my alma mater. Last spring when she was interviewing at a different veterinary school (one that was building a brand-new small animal facility and had recently increased its class size by about 30), I listened to a faculty member boast to the interview candidates about the incredible demand for veterinarians in general and the school's own graduates in particular.

I held my jaw so it wouldn't fall to the floor. Afterward, I asked the speaker (in private) if she truly believed that there was an incredible demand for veterinarians and, if so, what data supported her opinion. Her eyes flashed momentary irritation before she recovered and asked if I was a veterinarian. I confirmed that I was and then told her that my view was much less rosy. Her parting comment was along the lines of, “All our graduates get jobs!”

My thought was, “Maybe now, but how about in a few years when your supersized classes start graduating?”

Do many veterinarians in academia not even recognize the excess capacity that exists in private practice? Is it true, as so many in private practice believe, that many of our veterinary schools have expanded class size primarily to take in more tuition dollars? Doesn't that seem shortsighted for the profession as a whole? I can sympathize greatly with the veterinary school faculties trying to balance the financial needs of the university and the educational needs of the students, but I feel strongly that increas-

ing the number of graduating veterinarians at a time when there exists documented excess capacity will in the long run be very damaging to our profession.

Get real about the hardships

I have never regretted my decision to become a veterinarian. I love my profession and I have a deep bond to my alma mater. (If only that football team could turn the corner!) I worry, though, about the future of veterinary medicine and, of course, the future of my own daughter upon graduation. What will happen to the level of care veterinarians can provide our patients if our practices are barely profitable? How can we possibly address the growing student debt problem if new grads can barely earn a living after graduation, *let alone pay off debt*?

Let's be honest and take a broad view of the profession as it is *right now*.

- > We are graduating too many veterinarians.
- > We have enough (or maybe too many) veterinary schools as it is.

> Many general veterinary practitioners struggle to earn enough income to justify the education expense.

> Practicing veterinarians face intense, sometimes crippling competition.

And the effect of the inflated class sizes in the existing veterinary schools hasn't even hit the real world yet. On top of that, we are opening new veterinary schools. As it stands now, in 2017 we will be graduating 18 percent more veterinarians than we are in 2013. How does that make sense? Will some magic wand or unforeseen economic boon create well-paying jobs for all those new veterinarians?

If not, those graduates—my daughter included—will face a daunting economic world. I think what makes sense is 10 percent fewer graduates in 2017, not 18 percent more.

If the new veterinary schools being planned eventually open and if the existing schools maintain their recently enlarged class sizes, in five years how bad will it be for veterinarians, specialists and even those in academia?

All in all, we can't let the situation get any worse—can we?

*Douglas A. Thieme, DVM
Fort Lauderdale, Fla.
Purdue University 1983*

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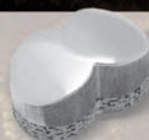
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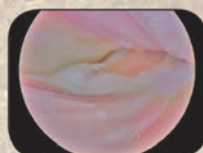
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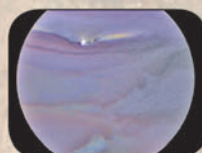
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If one of your male employees came to you with concerns about gender bias, what would you do to remedy the situation?

The Helo Veterinary Center had grown steadily over the past seven years. This Midwestern clinic started by Dr. Helo now had six veterinarians and nine veterinary technicians. Dr. Helo believed one of the secrets of success was creating a pleasant working environment through encouraging camaraderie among coworkers.

Recently James Hass was interviewed and chosen for the position of senior veterinary technician. James had trained at a local college, obtained his veterinary technician certification, and worked at a nearby animal hospital for the past six years. He was excited to be hired by a larger facility. His previous practice had been a small clinic with four employees. This was a chance for him to broaden his veterinary technical horizons. James also fit in well with the staff. His fellow veterinary technicians respected his skills and the doctors made him feel welcome.

However, a few things began to make James feel uneasy in his new position. For one thing, the technicians' uniforms, which were provided by the clinic, were powder blue scrubs with a pink band running down the front of the scrub shirts. These scrubs wouldn't have been James' choice, but his coworkers

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enjoyed the look. Also, the break room chatter often revolved around his fellow female technicians talking about good-looking male clients that had recently presented their pets for treatment. And the employee of the month, selected by Dr. Helo for exemplary performance, was given a spa treatment coupon at the local boutique.

What's more, James prided himself on his physical fitness and spent two afternoons when not on duty at the local gym. His fellow technicians commented on the fact that he was really buff, and they affectionately nicknamed him "muscle man" because of his muscular appearance.

Eventually James started to ruminate about his comfort level in his working environment. It was not a particular person or even a single comment, but rather a culmination of comments reflecting the staff's attitude that started to make him feel self-conscious about his gender. He did not feel he was being sexually harassed, but he did think his sex and sexuality were being abnormally noted. If he were a female employee in a male-dominated workplace, would comments about sexy women, nicknames referencing prominent body features and having to wear more masculine uniforms be considered forms of sexual harassment or simply unintentional insensitivity?

ethnic and gender diversity. In view of these growing pains, all staff members needed to be sensitive to issues that might make a coworker uncomfortable and refrain from such behavior. James received the memo and felt that it did not go far enough in addressing those issues that made him ill at ease. He continued to fulfill his duties at the Helo Veterinary Center, but things were never quite the same after the memo was issued. Four months into his tenure, James decided he would be happier returning to a smaller veterinary work environment and left Dr. Helo's clinic.

Rosenberg's response

Gender bias is unacceptable even if it is subtle or unintentional. Double standards must not exist. It is just as inappropriate to address a male technician as "muscle man" as it would be to label a female technician a "hottie."

Workplace directives must be clear. Dr. Helo did not make it crystal clear to his staff where he stood on this issue.

A culmination of comments reflecting the staff's attitude made James feel self-conscious about his gender. He did not feel he was being sexually harassed, but he did think his sex and sexuality were being abnormally noted.

James scheduled a meeting to speak with Dr. Helo, the practice owner. He voiced his concerns but stopped short of saying that he was being sexually harassed. Camaraderie and mutual respect among coworkers were of paramount concern to him. He definitely understood how his lone male technician felt, but he told James he did not think he was being sexually harassed. He also stated that it was very important that the other members of his technical staff be comfortable in their work environment as well. Dr. Helo went on to say in a tactful manner that sexual harassment was a violation of workplace law, but that basic harassment and coworker insensitivity were not. He believed it was important to reach a middle ground in this situation so that no one would feel burdened by his or her workplace environment.

After the meeting, Dr. Helo communicated with his technicians via memo. He advised them to be aware that workforce growth often comes with both

He should have intervened when he perceived that his female technicians were a bit more preoccupied than they should have been with their new male coworker. Unfortunately Dr. Helo minimized his new technician's concerns. This resulted in the loss of a very capable, skilled employee who simply wanted a harassment-free workplace in order to do his job.

Get in touch

Do you agree with Dr. Rosenberg? We'd like to know what you think. E-mail us at dvmnews@advanstar.com or post your thoughts at dvm360.com/community or [facebook.com/dvm360](https://www.facebook.com/dvm360). dvm360.com



Dr. Marc Rosenberg is director of the Voorhees Veterinary Center in Voorhees, N.J. He is a member of the New Jersey Board of Veterinary Medical Examiners.



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Canine Cushing's Case Files:

THE INS AND OUTS OF DETECTION AND TREATMENT

Hyperadrenocorticism affects many adult dogs. Whether the disease is pituitary-dependent (80% to 85% of spontaneous cases) or adrenal-dependent (15% to 20% of cases), the clinical and laboratory abnormalities associated with it result from chronic hypercortisolemia. Clinical signs of hyperadrenocorticism at the time of diagnosis can vary widely, and they develop so gradually that owners often mistake the signs for “normal” aging. Being aware of the more subtle signs of canine hyperadrenocorticism can be key to early diagnosis and initiation of therapy.

Whenever possible, pituitary-dependent hyperadrenocorticism and adrenal tumors should be differentiated to help guide therapy and patient monitoring. Early diagnosis and management of canine hyperadrenocorticism may not only improve the patient's clinical signs but may also keep the more severe consequences of Cushing's syndrome from developing.

COMMON CLINICAL SIGNS OF CANINE HYPERADRENOCORTICISM

- Polyuria (owners may complain of housesoiling)
- Polydipsia
- Polyphagia (owners may complain of food stealing or excessive begging)
- Alopecia
- Recurrent skin disease
- Lethargy
- Pendulous abdomen
- Excessive panting
- Thin skin

Other clinical signs may include hypertension, comedones, seborrhea, heat intolerance, hyperpigmentation, calcinosis cutis, bruising, facial paralysis, failure to cycle, clitoral hypertrophy, testicular atrophy, poor hair regrowth after surgery, recurrent urinary tract infections, demodicosis in a middle-aged or older dog, and a first incidence of pyoderma in an older dog.

Case file: LIBBY

12-year-old spayed female toy poodle weighing 5.3 lb (2.4 kg)

Patient history and initial diagnostic workup

Libby was presented to her primary care veterinarian for a dental prophylaxis. Libby also had a six-month history of panting, polyuria, polydipsia, and recurrent ear infections. Physical examination before the dental procedure revealed a swelling in Libby's perineal region, and the veterinarian subsequently diagnosed a left perineal hernia. The dental prophylaxis was rescheduled for a later date, and Libby was referred to the Mississippi State University College of Veterinary Medicine (MSU-CVM) for hernia repair.

Referral evaluation

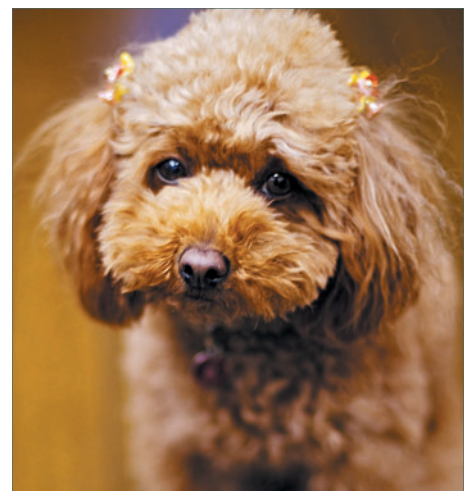
On presentation to MSU-CVM, Libby was bright and alert. The left perineal hernia was noticeable and was easily reduced. Her abdomen appeared distended, but abdominal palpation revealed no abnormalities. The results of a serum chemistry profile revealed mild increases in alanine aminotransferase (136 U/L; reference range = 10 to 90 U/L) and alkaline phosphatase (153 U/L; reference range = 11 to 140 U/L) activities. Libby's urine specific gravity was 1.019. Based on these results and the history of panting, polyuria, polydipsia, and recurrent infections, a workup for hyperadrenocorticism was performed.

Adrenal function test results

Results of an adrenocorticotrophic hormone (ACTH) stimulation test revealed a baseline cortisol concentration of 8.5 µg/dl (reference range = 1.4 to 5 µg/dl) and a one-hour post-ACTH cortisol concentration of 24.8 µg/dl (reference range = 5.5 to 20 µg/dl). These results confirmed hyperadrenocorticism.

Imaging

Abdominal imaging was performed to differentiate pituitary-dependent hyperadrenocorticism (PDH) from an adrenal tumor. The abdominal radiographic findings were unremarkable. Abdominal ultrasonography revealed normal-sized and symmetrical adrenal glands and no



evidence of an adrenal mass. Also noted were a single hepatic lesion and a single splenic lesion, as well as a gallbladder mucocele in the early stages of development. Ultrasound-guided fine-needle aspirates of the lesions within the liver and spleen were obtained. A thoracic radiographic examination was also performed, and the findings were unremarkable.

Diagnosis

Libby's abnormal ACTH stimulation test results along with the abdominal ultrasonographic findings provided a working diagnosis of PDH.

Cytologic examination of the hepatic and splenic lesion aspirates showed mild extramedullary hematopoiesis, likely consistent with regenerative nodules. The liver aspirates also showed evidence of vacuolar degeneration, a finding consistent with hyperadrenocorticism.



Todd M. Archer, DVM, MS, DACVIM

Dr. Archer is an assistant professor of small animal medicine in the Department of Clinical Sciences at the Mississippi State University College of Veterinary Medicine.

*The dog in the photograph is not Libby, the dog described in this article.

Initial treatment

It was recommended that Libby receive treatment for PDH before undergoing perineal hernia repair surgery, and the owner chose medical therapy for PDH. Management of Libby's mucocele would be instituted later if needed.

Because of Libby's small size and because I start patients with hyperadrenocorticism at the low end of the recommended VETORYL® Capsules (trilostane) dose range, I prescribed 5-mg compounded trilostane capsules, given once daily at a dose of 2.1 mg/kg in an extralabel fashion. These 5-mg capsules were compounded from VETORYL Capsules at the MSU-CVM pharmacy.

Libby's owners were instructed to give Libby one 5-mg trilostane capsule orally once daily in the morning with food and to return in 14 days for a recheck and follow-up ACTH stimulation test. The owners were also instructed to watch for signs of hypoadrenocorticism (such as weakness, lethargy, vomiting, or anorexia) and to seek immediate veterinary care if she exhibited these signs.

Follow-up visits

At the two-week follow-up visit, Libby was doing better at home, with a reduction in clinical signs and no adverse reactions to trilostane. Upon questioning, the owners stated that they had been administering the trilostane capsules at night. The ACTH stimulation test to monitor dogs receiving VETORYL Capsules should be performed four to six hours after drug administration, so the owners were again instructed to administer Libby's trilostane capsules in the morning with food and to reschedule the ACTH stimulation test.

Libby was presented two weeks later for a recheck examination. The owner reported that Libby was doing well at home. Her polydipsia and polyuria had improved slightly, and her panting had decreased markedly. On physical examination, Libby was bright and alert with a normal temperature, pulse, and respiration. Her perineal hernia was unchanged.

An ACTH stimulation test was performed four hours after trilostane administration. Libby's baseline cortisol concentration was 1.9 µg/dl and her post-ACTH cortisol concentration was 3.7 µg/dl, indicating adequate inhibition of glucocorticoid production. Measurement of Libby's serum electrolyte concentrations (recommended at the 30-day post-VETORYL Capsules treatment re-examination) was inadvertently overlooked at this visit.

Libby's owners were instructed to continue to give Libby one 5-mg trilostane capsule once daily in the morning with food, to schedule surgical repair of the perineal hernia within three weeks, and to schedule a three-month post-trilostane treatment recheck examination.

Two weeks later, Libby was presented to MSU-CVM for surgical hernia repair, which was

VETORYL® Capsules (trilostane) are the only FDA-approved drug indicated for the treatment of pituitary-dependent and adrenal-dependent hyperadrenocorticism (PDH and ADH) in dogs. Trilostane, the active ingredient, blocks hormone production in the adrenal cortex by competitive enzyme inhibition and is clinically effective in treating dogs with PDH and ADH; however, it does not affect tumor growth.

- The use of VETORYL Capsules is contraindicated in dogs that have demonstrated hypersensitivity to trilostane.
- Do not use VETORYL Capsules in animals with primary hepatic disease or renal insufficiency.
- Do not use in pregnant dogs. Studies conducted with trilostane in laboratory animals have shown teratogenic effects and early pregnancy loss.
- The most common adverse reactions reported are poor/reduced appetite, vomiting, lethargy/dullness, and weakness.
- Occasionally, more serious reactions, including severe depression, hemorrhagic diarrhea, collapse, hypoadrenocortical crisis or adrenal necrosis/rupture may occur, and may result in death.

completed without complications. Libby's preanesthetic CBC and serum chemistry profile results were clinically unremarkable. Libby is scheduled to return to the internal medicine service for a three-month post-trilostane treatment reexamination.

Dr. Archer's perspective

Libby's case illustrates the need to evaluate the patient history and results of routine blood tests to help identify hyperadrenocorticism as a possible differential diagnosis. Initially, the dental prophylaxis and perineal hernia were the primary concerns in this patient, but ultimately Cushing's disease was diagnosed and treated.

An early gallbladder mucocele was identified during Libby's workup. The mucocele will be further assessed during future rechecks, with therapy instituted as indicated. In a recent study, mucocele formation was 29 times more likely in dogs with hyperadrenocorticism than in dogs without hyperadrenocorticism.¹ Although Libby did not present with clinical signs or have laboratory abnormalities consistent with a gallbladder mucocele, a mucocele should be considered in any dog with hyperadrenocorticism that presents with acute illness and evidence of hepatobiliary disease.

I prescribed compounded trilostane for Libby in an extralabel fashion because of her small size and because I prefer to start patients with hyperadrenocorticism at the low end of the labeled VETORYL Capsules dose range. Specific patients may require trilostane in strengths or forms not offered by VETORYL Capsules. If compounding cannot be avoided, trilostane can only be legally compounded using the contents of FDA-approved VETORYL Capsules as the starting material.²

In a recent study, all batches of capsules compounded from VETORYL Capsules (compounded controls) conformed to the acceptance criteria for trilostane content (90% to 105% of label claim), whereas 38% of the batches of compounded capsules purchased from compounding pharmacies failed to meet the acceptance criteria for content.³ The mean

percent dissolution for compounded capsules purchased from compounding pharmacies was also lower and impurity profiles were significantly higher when compared with capsules compounded from VETORYL Capsules. This highlights the need to ensure that the compounding pharmacy you use is technically proficient and formulates compounded trilostane capsules from VETORYL Capsules.

Keep in mind that when the granules are removed from VETORYL Capsules to create a compounded trilostane drug, the drug can no longer be called VETORYL Capsules. Also, the safety, effectiveness, and stability of the compounded drug become the responsibility of the prescribing veterinarian, and are not the responsibility of Dechra Veterinary Products or the compounding pharmacy.^{4,5}

In addition, Libby's case highlights the need to ensure that owners understand how to administer trilostane. The follow-up ACTH stimulation testing that is performed as part of patient monitoring during treatment with VETORYL Capsules should occur four to six hours after administration, which makes administering the drug once a day in the morning ideal.

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This case was solicited from the prescribing veterinarian and may represent an atypical case study. Similar results may not be obtained in every case.

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¹Pharmaceutical Evaluation of Compounded Trilostane Products (Cook, et al, JAAHA 48:4, Jul/Aug 2012)


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WARNINGS: In case of overdosage, symptomatic treatment of hypoadrenocorticism with corticosteroids, mineralocorticoids and intravenous fluids may be required. Angiotensin-converting enzyme (ACE) inhibitors should be used with caution with VETORYL Capsules, as both drugs have aldosterone-lowering effects which may be additive, impairing the patient's ability to maintain normal electrolytes, blood volume and renal perfusion. Potassium-sparing diuretics (e.g., spironolactone) should not be used with VETORYL Capsules as both drugs have the potential to inhibit aldosterone, increasing the likelihood of hyperkalemia.

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MEDICINE | Surgery STAT

TAILOR YOUR *bone fracture* repair technique

Implant failures and union problems are preventable. Save your patients from having to endure additional health issues and surgeries by doing it right the first time. *By Karl C. Maritato, DVM, DACVS*

On the surface, fracture repair using bone plates can appear to be a simple application of a plate and screws to bone fragments. This common misconception can leave a patient with difficulties and complications after surgery if the procedure isn't performed correctly. Rules of fracture fixation have been developed through several years of research to

maximize the chances of successful repair. Most of the rules were developed for people; however, they have been adapted for dogs and cats, which presents unique challenges because treating an animal is different than treating a person.

Incorrect fracture repair can lead to multiple complications, including implant failure, malunion, delayed union

and nonunion. Patient activity can also result in severe complications, so it is critical that pet owners understand that postoperative restrictions are not just suggestions but imperative rules that must be followed.

Implant failure

Implant failure occurs when implants are either inappropriately chosen or



>>> **Figures 1A and 1B:** Craniocaudal and mediolateral views of a malunion tibial fracture. Note the bony connection but poor alignment and overriding of the fragments.

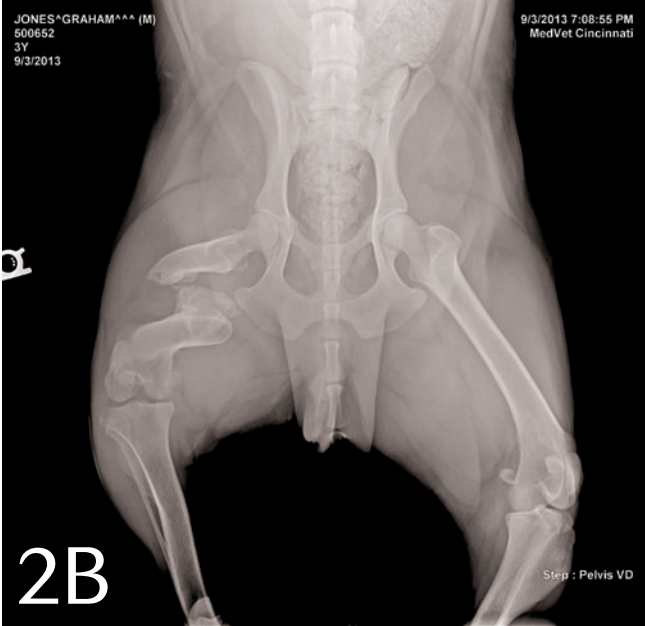


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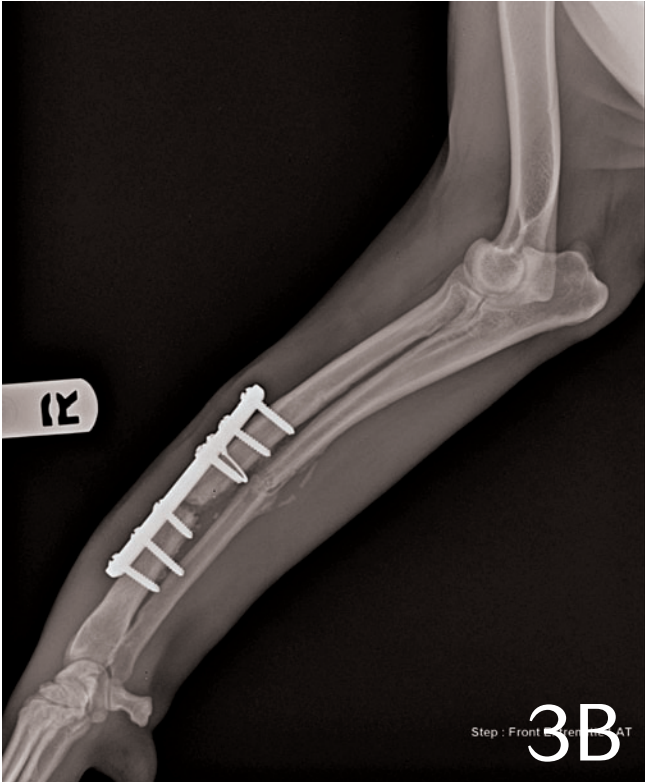


>>> **Figures 2A and 2B:** Craniocaudal and mediolateral views of a nonunion femur fracture of six months' duration. Note the closed ends of the medullary canal with no evidence of activity.



>>> **Figure 3A:** Craniocaudal view of a radius/ulna fracture two weeks after the first repair. Note the misalignment of the fragments from screw loosening.

>>> **Figure 3B:** A mediolateral view of the radius/ulna fracture two weeks after the first repair. Note the proximal screws pulling out of the radius.



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inappropriately applied to a specific patient or fracture type. For example, an inappropriately chosen implant might be a 2-mm plate placed on the bone of a 50-pound dog, or it could be a properly chosen 3.5-mm plate for the same 50-pound dog that is not sufficiently long enough to span the desired bone and does not allow for placement of the appropriate number of screws, thus not providing sufficient strength for the construct.

Another example is an appropriate sized plate for the patient, but one that is inappropriate for the type of fracture, e.g. a transverse fracture versus a comminuted fracture. The forces acting on these two fracture types are different and have different requirements for appropriate stabilization.

Mistakes can stem from lack of knowledge and understanding of fracture biomechanics, the forces acting on bones and the different processes of bone healing. Any of these mistakes can cause bending or breakage of the plates, pulling out or breakage of the screws or the development of union problems.

Union problems

There are three types of union problems commonly seen: malunion, delayed union and nonunion.

Malunion (Figures 1A and 1B, p. M1) describes a fracture that has healed but not in the proper anatomic alignment. Malunions can result from improper alignment at the time of surgery, inappropriate fixation that leads to displacement of the bone fragments, or fractures that have healed out of alignment without surgery. They can result in valgus, varus, procurvatum, recurvatum and torsion of the affected bone. This can lead to abnormal force transmission along the bone and the associated joints, which causes abnormal function and possibly the development of osteoarthritis. Not all malunions are clinically important, but when they are, they need to be modified by corrective osteotomy.

Delayed union describes a fracture that takes longer to heal than expected. This might be due to the presence of an infection or weak implants that allow too much motion at the fracture site, which prevents efficient fracture healing. Another cause of delayed union can be a too-rigid fixation that overprotects the bone from normal stress. The term *stress protection* is

Mistakes can stem from lack of understanding of fracture biomechanics, the forces acting on bones and the different processes of bone healing. These mistakes can cause breakage of plates and screws or union problems.



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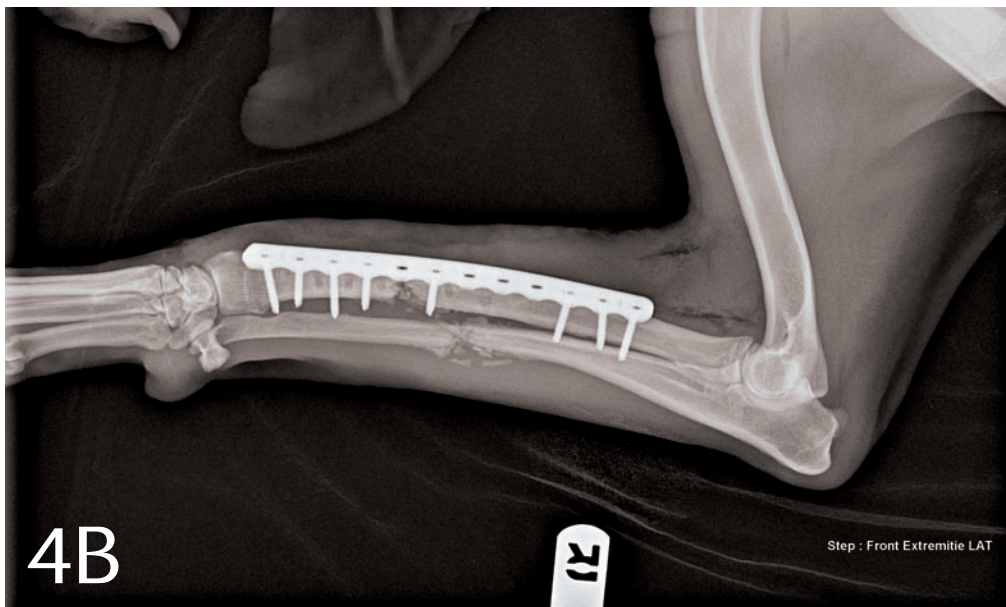
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>>> **Figures 4A and 4B:** Craniocaudal and mediolateral views of the same radius/ulna fracture immediately after the second repair. Note the increased length of the plate and the increased number of screws for this sized patient.

used to describe this complication and can be caused by implants that are too large or by too many screws being placed both proximal and distal to the fracture site. If this occurs, gradual strategic destabilization of the construct is generally performed.

Nonunions are divided into viable and nonviable nonunions. A viable nonunion is a fracture that has not healed but has the biologic ability to do so if the conditions are improved, such as better stability of the repair. A nonviable nonunion (Figures 2A and 2B, p. M2) is nonunion in which the fracture ends have gone dormant and healing will not commence without intervention, including reopening of the medullary canals and application of bone grafts.

pressed together and secured by the plate. The bone and the plate are then working together. We call this *load sharing* between the plate and the bone since the bone has been reconstructed.

With a comminuted fracture, rebuilding the integrity of the bone structure is much more difficult. Because of this, the forces acting across the plate are not shared by the bone nearly as well as with a transverse fracture. In this type of repair the plate is used in a buttress fashion. Therefore, if the implants used are not capable of handling that increased stress, failure will ensue.

As we can see in Figures 3A and 3B, the comminuted fracture allowed for more force across the fracture line than the plate-screw-bone construct could handle, and the screws began to pull out of the proximal portion of the plate. The subsequent repair used a larger, longer plate with increased number of screws (Figures 4A and 4B). This allowed for better distribution of the forces acting across this comminuted fracture, and the plate could better handle those forces. **dvm360**



Dr. Karl Maritato is an ACVS board-certified veterinary surgeon with Med-Vet Medical and Cancer Centers for Pets in Cincinnati and Dayton, Ohio. Dr. Maritato lectures to the community throughout the year in passing his experiences on His primary interest is in especially fracture repair and joint

Fracture biomechanics and repair

The patient shown in Figures 3A and 3B (p. M2) sustained a comminuted radius/ulna fracture that was repaired prior to referral. Comminuted fractures are biomechanically unstable. Let's compare that to a transverse fracture and see how the two differ when approaching repair.

A transverse fracture could be repaired with the plate shown in Figures 3A and 3B because there are only two fragments associated with the fracture, which can be com-

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FORMULATED BY ROBERT J. SILVER, DVM, MS, CVA

Secret to human AIDS vaccine may be found in feline peptide

Veterinary, human medical researchers identify virus component that kills HIV.

Researchers from the University of Florida and the University of California, San Francisco, have found that certain peptides of the feline immunodeficiency virus (FIV) can produce human T cells that fight against human immunodeficiency virus (HIV). The surprise discovery sets the stage for an HIV vaccine derived from a particular peptide region of the FIV virus.

Janet Yamamoto, PhD, a professor of retroviral immunology at the UF College of Veterinary Medicine and the study's corresponding author, says that in previous studies, scientists have combined various whole HIV proteins as vaccine components, but none have worked well enough to be used as a commercial vaccine. The researchers in this study isolated T cells from HIV-positive individuals and incubated these cells with different peptides that are crucial for survival of both HIV and FIV. They then compared the reactions they got with FIV peptides to what they found using HIV-1 peptides.

What the research revealed was a specific viral peptide in FIV that does not mutate and can induce anti-HIV T cell activities. However, while T cell peptides can prompt the body's T cells to recognize viral peptides on infected cells and attack them, Yamamoto says not all HIV peptides can work as vaccine components.

In fact, she says a T cell-based vaccine has never been used to prevent any viral diseases. "So we are now employing an immune system approach that has not been typically utilized to make a vaccine," Yamamoto says. "The possible use of the cat virus for this vaccine is unique."

As a researcher at the University of California-Davis, Yamamoto discovered FIV in 1986, along with fellow professor Niels C. Pederson. She went on to co-develop the FIV vaccine made available to veterinarians in 2002.

The research appears in the October 2013 issue of the *Journal of Virology* and can be found online at jvi.asm.org. **dvm360**

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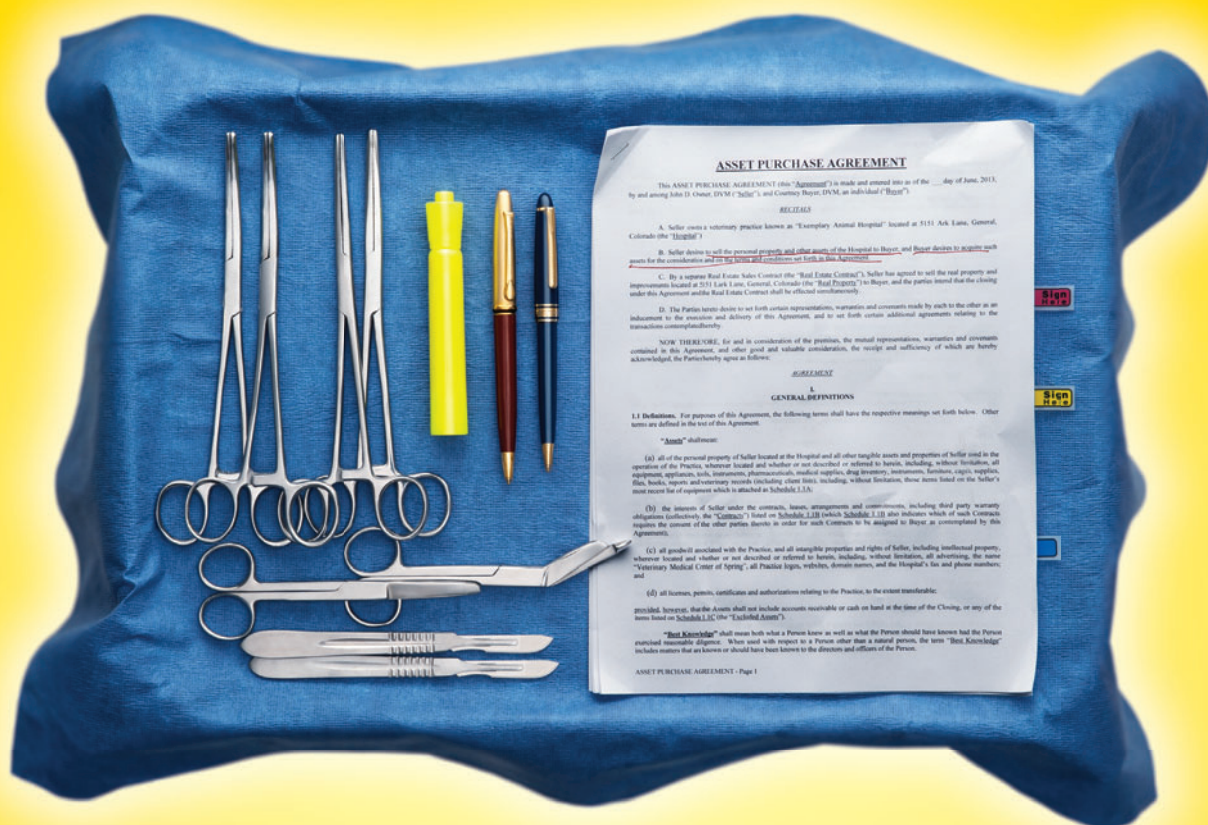
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Canine *urolith* epidemiology: 1981-2012

Data shows urolith composition holding steady.

By Carl A. Osborne, DVM, PhD, DACVIM; Jody P. Lulich, DVM, PhD, DACVIM; Eugene Nwaokorie, DVM, MS; and Vachira Hunprasit, DVM

The mineral composition of uroliths in dogs has varied in the last three decades. In this article, we evaluate canine uroliths submitted to the Minnesota Urolith Center to determine if trends in 2012 were different from previous years. We then look at what this information might mean for our patients going forward.

Composition comparison over three decades

Overall, data indicate minimal variation in

calcium oxalate urolith percentages compared with the recent past (Figure 1). But, over time, a shift in composition has occurred.

In 1981, calcium oxalate was detected in only 5 percent of canine uroliths submitted to the Minnesota Urolith Center, whereas struvite (also called magnesium ammonium phosphate) was detected in 78 percent of canine uroliths. At that time, canine calcium oxalate uroliths were considered to be rare. During subsequent years, canine calcium oxalate uroliths were thought to be associated

with trends similar to those we have documented in cats. As with cats, during the past 30 years, there has been a substantial increase in calcium oxalate uroliths (41 percent) and a substantial decrease in struvite uroliths (39 percent) (Table 1 and Figures 1-4).

Possible causes of this decline in the frequency of naturally occurring struvite uroliths and a reciprocal increase in calcium oxalate uroliths include:

1. Widespread use of a calculolytic food designed to dissolve sterile struvite uroliths.

Figure 1

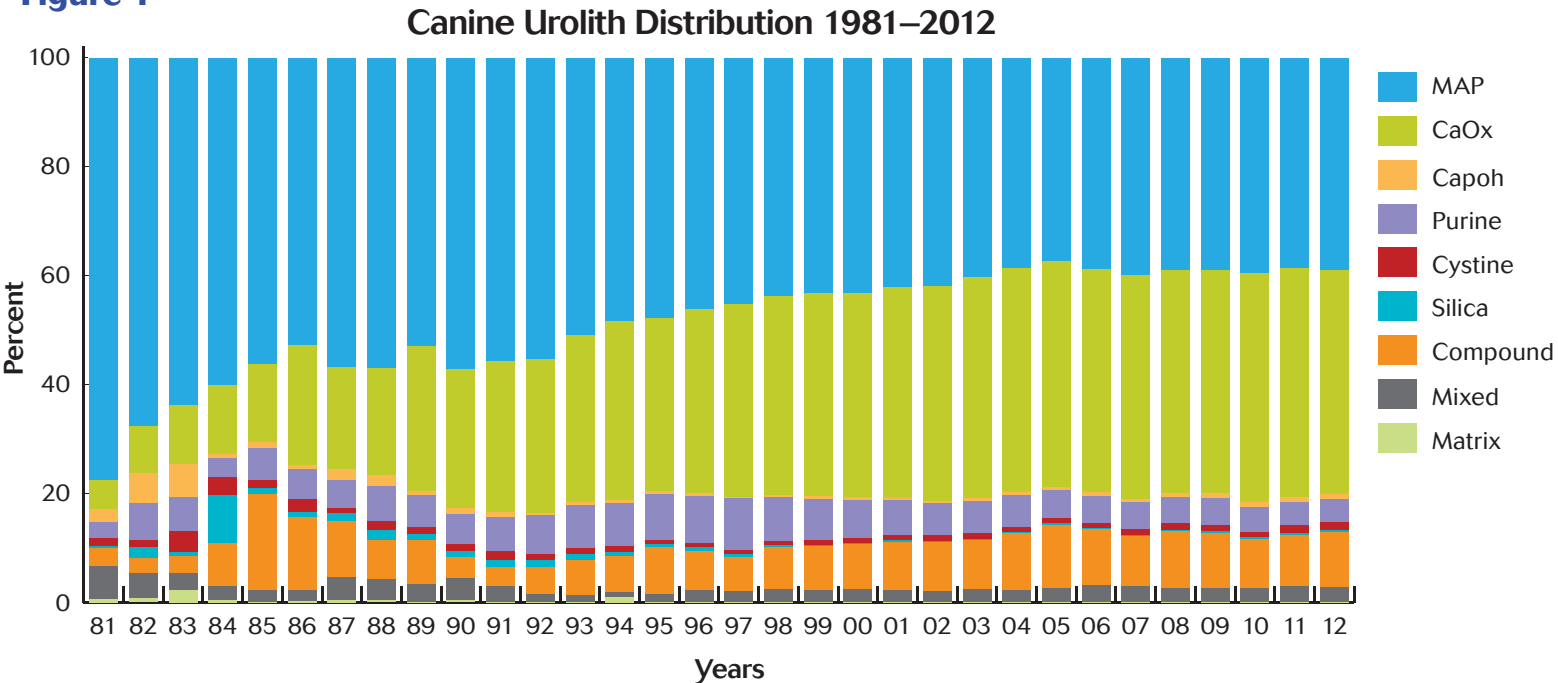


Table 1

Mineral composition of 61,255 canine uroliths, 2012*

Predominant mineral type	Number of uroliths	Percentage
Magnesium ammonium phosphate (MAP)6H2O	23,918	39
Magnesium hydrogen phosphate 3H2O	4	<0.1
Calcium oxalate	25,178	41
Calcium phosphate	595	1
Purines (urate salts, uric acid)	2,493	4
Xanthine	47	<0.1
Cystine	870	1.4
Silica	234	0.4
Other (mixed, compound, matrix, etc.)	7,916	12.9

*Uroliths analyzed by polarizing light microscopy and/or infrared spectroscopy.

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2. Widespread use of maintenance and preventive foods modified to minimize struvite crystalluria. (Some dietary risk factors that decrease the risk of struvite uroliths increase the risk of calcium oxalate uroliths.)

3. Inconsistent follow-up evaluation with urinalysis and radiography to determine the efficacy of dietary management protocols.

Likewise, the probability that > 95 percent of the canine struvite uroliths submitted to our center were induced by microbes that produced urease-producing enzymes, while < 95 percent of the feline uroliths were not associated with urease-positive microbes, is problematic. A hypothesis that might explain, at least in part, the trend toward increased calcium oxalate urolith occurrence in both groups is the treatment of canine infection-induced uroliths with an appropriate diet and

antimicrobial drugs and the treatment of sterile feline uroliths with an appropriate diet.

Therapeutic implications

Being aware that infection-induced struvite is a major mineral type in dogs and sterile struvite is a predominant mineral type in cats—and that the cause of sterile struvite and infection-induced struvite is different—is helpful when formulating therapeutic plans.

An appropriate antimicrobial agent and an appropriate diet are required to consistently induce dissolution of infection-induced uroliths in dogs, while preventing urinary tract infections is essential to minimize the recurrence of infection-induced uroliths. A special diet is not necessary. Consumption of an appropriate diet is usually effective in dissolving and minimizing the recurrence of sterile struvite uroliths.

A continuing trend

On a side note, during the past 30 years, the number of canine urolith submissions has exceeded the number of feline urolith submissions by a ratio of about 4:5. This continuing trend is surprising given that there are more cats than dogs living with families in the United States. For example, in 2012, we received 61,255 canine uroliths and 13,991 feline uroliths. This results in a ratio of 4.3 canine uroliths for every feline urolith that we received.

Author's note: With the support of an educational gift from Hill's Pet Nutrition, as well as contributions from veterinarians and pet owners worldwide, the Minnesota Urolith Center is providing quantitative urolith analysis at no charge. Online submission, e-mail notification and elec-

Figure 2

Mineral Composition of Canine Uroliths 2012

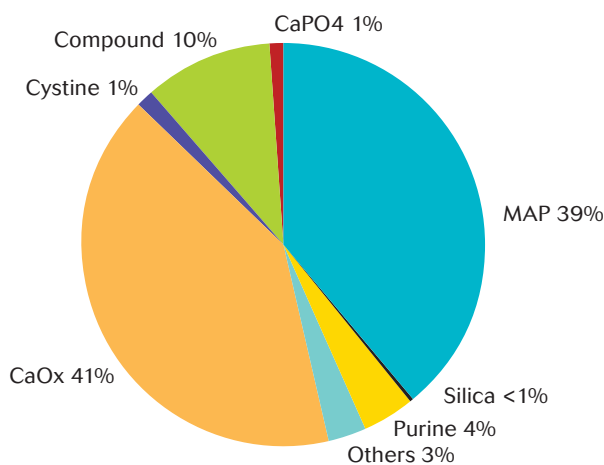


Figure 3

Mineral Composition of Canine Uroliths 1981–2012

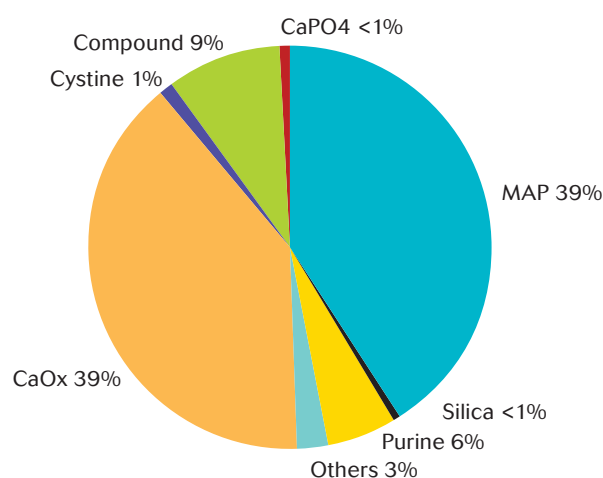
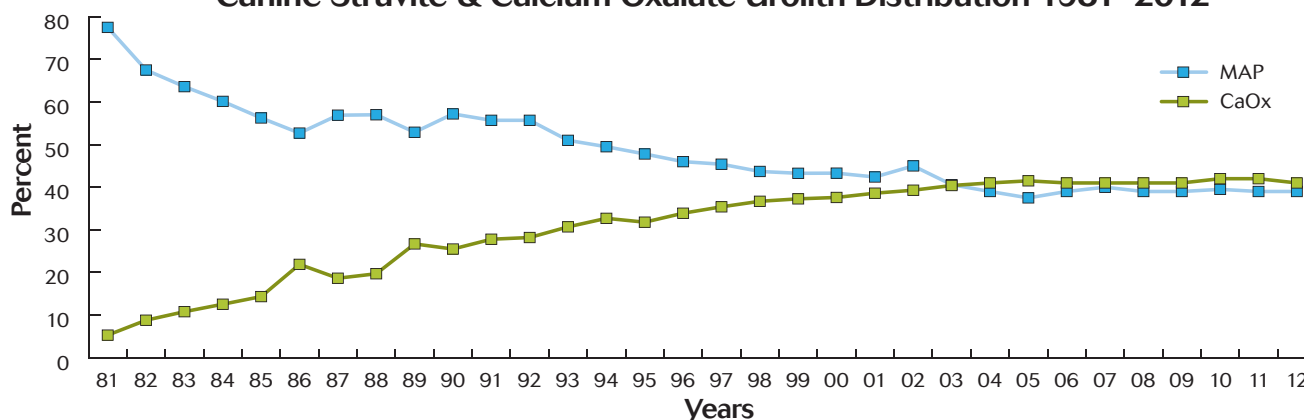


Figure 4

Canine Struvite & Calcium Oxalate Urolith Distribution 1981–2012



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Dr. Carl Osborne is director and a professor at the College of Veterinary Medicine at the University of Minnesota. Dr. Jody Lulich is the co-director of the Minnesota Urolith Center and professor of veterinary internal medicine at the University of Minnesota. Dr. Eugene Nwaokorie is a postdoctoral

associate in the Veterinary Clinical Sciences Department at the College of Veterinary Medicine at the University of Minnesota. Dr. Vachira Hunpravit is a PhD candidate in the Veterinary Clinical Sciences Department at the College of Veterinary Medicine at the University of Minnesota.



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Veterinarian records song to benefit pets with cancer

Profits will help families pay for pets' treatments.

Veterinary oncologist Joshua Louis Lachowicz, DVM, DACVIM (oncology), combined his two passions—veterinary medicine and music—into an original song released on iTunes to benefit pets with cancer. Known as Joshua Louis when performing as a singer-songwriter, Lachowicz founded the Joshua Louis Animal Cancer Foundation (JLACF) in 2011 to raise money for families in need of financial assistance to cover the cost of cancer treatment after a pet's diagnosis. Lachowicz says all profits from the song's sales on iTunes will go directly to the foundation.

"Cancer affects millions of animals' lives each year," Lachowicz says in a release. "More than 20 percent of animals over 5 and 40 percent over 10 years old will die from cancer." Lachowicz practices at BluePearl Veterinary Partners in New York City. He became an oncology specialist in 2006.

"All of us at the JLACF are volunteers, and we do this because we love animals and understand the importance that our furry friends have in our lives," Lachowicz says. "Those in need span all age groups, and we believe they should be given the opportunity to spend more quality time with their loved one."

The song is available for download on iTunes (itunes.apple.com/us/album/tomorrow-single/id680476868?uo=4). An accompanying video is available on YouTube (youtu.be/Q-W6jfzXEVk). **dvm360**

EQUINE | Gastroenterology

EPE • A growing concern in foals

Though its clinical signs can be vague, equine proliferative enteropathy should always be considered in foals with hypoproteinemia. *By Ed Kane, PhD*

As a 6-month-old foal living at Rosebud River Ranch in Snoqualmie, Wash., Q was very quiet and somewhat lethargic. He wasn't growing as much as he should. His coat was scruffy, similar to a foal that was a little "wormy," and he had low-grade fevers. When he was about 11 months old, he spiked a fever of 104 F (40) and became severely depressed and completely anorexic. It was

then that a veterinarian examined him.

The veterinarian did some blood work and noticed that the foal's serum albumin concentration was very low, though he couldn't explain why. He treated him for a suspected viral or bacterial infection, giving him flunixin meglumine, sulfonamide antibiotics, and fluids but was still puzzled about a definitive diagnosis. When Q's condition continued to deteriorate, he was

referred to Chantal Rothschild, DVM, DACVIM, at Northwest Equine Veterinary Associates in Maple Valley, Wash.

"Clinically, he was slightly small for his age," Rothschild notes. "He was febrile and very lethargic. He wouldn't eat, his coat was scruffy and he exhibited ventral edema." Putting the history together, Rothschild realized the foal had been sick for several months.

His blood work, though, was some-



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>>> **Photo 1:** A foal with EPE due to *L. intracellularis* infection shows signs of severe weight loss, a poor coat and lethargy.

>>> **Photo 2:** The same foal three months later, fully recovered after therapy.



what unremarkable for how sick he was. Laboratory results showed a mildly increased white blood cell count, hypoproteinemia and low serum albumin. An ultrasound exam of his chest and abdomen was done in an effort to determine what kind of infection was involved. Rothschild submitted several other tests, including assays for serum M protein and fecal occult blood to rule out other diseases, but now equine proliferative enteropathy (EPE) caused by *Lawsonia intracellularis* was the main suspicion.

Rothschild submitted a fecal sample for PCR detection of *L. intracellularis* DNA and the test came back negative. (Fecal PCR results tend to be positive at the beginning of the disease, when the microbial organism is actively replicating in the intestinal epithelial cells, but the duration of Q's illness likely led to a negative PCR result.) However, with his serum protein concentration dropping very quickly, his condition deteriorating and the edema under his jaw worsening, there wasn't much time to wait for further results.

With the signs noted, Rothschild decided to treat him for EPE, a disease common in swine but not commonly seen in horses in the Pacific Northwest, though prevalent in other states. If it was *L. intracellularis*, he was going to respond, and if it wasn't, he was probably going to die due to his condition.

Rothschild put Q on a regimen of azithromycin, rifampin, omeprazole,

sucralfate and flunixin meglumine to lower the fever and make him feel better. She also provided supportive therapy; Q was hydrated and tubed with water, electrolytes and mineral oil since he wasn't defecating during the time he was feverish and anorexic.

"Within two days of the antibiotic treatment he responded," Rothschild says. "His fever decreased, his albumin levels stopped dropping and within a few additional days, his rectal temperature was normal. He even started eating again." Q remained on the antibiotics for six additional weeks but no longer needed the supportive care since his condition had improved.

No pigs were ever present at Rosebud River Ranch. It was possible that either rabbits or deer were the source for Q's *L. intracellularis* infection, since both were fairly prevalent on the property and known sources for spreading the organism. Q was the only foal on the property and since *L. intracellularis* predominantly affects weanlings, no other horses were affected. In Q's case, stress might have also been an exacerbating factor, since he had recently traveled for castration and hernia repair surgery and may have had a compromised immune system.

Prevalence

EPE is a disease of foals caused by the obligate intracellular organism and gram-negative bacteria *L. intracellularis*.¹ Once in the gut, it resides freely in

the apical cytoplasm of infected intestinal enterocytes, resulting in a thickened small, and sometimes large, intestine.¹ It mainly affects weanling foals and causes fever, lethargy, peripheral edema, diarrhea, colic and weight loss.

Though many foals are exposed to the organism, only a few typically develop the disease. However, in recent years, reported cases of EPE have been increasing, primarily in post-weanling foals and occasionally in adult horses. The disease has been reported in the U.S., Canada, Europe, South Africa and Australia.¹

"We don't feel that it's an emerging disease anymore," states Nicola Pusterla, DVM, DACVIM, professor of equine medicine and epidemiology at UC Davis School of Veterinary Medicine. "It's been described since 1986 and clearly recognized since 2000. It's a disease that has essentially reached almost a worldwide distribution."

Incidence

Pusterla notes that EPE typically affects foals less than 1 year of age—and even as young as 3 months of age. But in California, one of the oldest horses that developed EPE was a 3-year-old miniature horse. "We even see it in young 2- to 3-year-old horses at race-tracks," he says.

Pusterla goes on to explain that the disease is a bit strange—it goes from being mainly sporadic with just a single farm having one case a year to farms that are now more endemic. "Even well-managed farms in central Kentucky have about 10 to 15 percent of their foal crop getting sick each year," he says.

Predisposing factors, such as the stress of weaning and parasitism, have been suggested in the development of EPE in foals.¹ It has also been suggested that foals that develop EPE were

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likely exposed to *L. intracellularis* via the oral ingestion of infected rabbit feces.² A recent study has shown that feces from rabbits that were experimentally infected with an equine isolate of *L. intracellularis* served as infectious material for weanling foals.³ Fecal-oral transmission of *L. intracellularis* has also been documented in naïve foals housed with critically infected foals experimentally challenged with an equine isolate of *L. intracellularis*.³

There are not many other diseases causing hypoproteinemia in foals, so L. intracellularis infection should always be a consideration, especially with the presence of GI signs.

Epidemiological investigations of premises from which clinical cases have been identified have revealed that 10 to 65 percent of unaffected foals and adult horses test seropositive for *L. intracellularis*.¹

Diagnosis

In addition to recognizing the clinical signs, clinicians can make a diagnosis with evidence of hypoproteinemia, thickened segments of the small intestinal wall as seen on abdominal ultrasound, positive serology and molecular detection of *L. intracellularis* in the feces.

According to Pusterla, one of the main characteristics of the disease is hypoproteinemia due to low serum albumin levels. And since there are not many other diseases causing hypoproteinemia, *L. intracellularis* infection should always be a consideration with this finding, especially with the presence of GI signs. In EPE cases, the serum protein is generally less than 50g/L and albumin less than 20g/L. A combination of decreased feed intake, coupled

with malabsorption and protein-losing enteropathy due to the proliferative nature of the disease, are likely causes for low serum albumin levels.²

In horses, lesions are most commonly seen in the ileum near the ileal-cecal junction and appear as a thickening of the mucosa. Gross lesions are not evident in all cases of EPE and may often

be overlooked. The intestines show irregular and patchy subserosal edema. The ileal mucosa is thickened with deep folds, and chronically affected animals may have patches of pseudomembrane covering the mucosa. Hypertrophy and thickening of the muscularis mucosa may occur in chronically affected or recovering animals.³



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>>> **Photos 3 and 4:** Prior to treatment, a sick Q had a scruffy coat and was lethargic and underweight.
>>> **Photo 5:** At the end of treatment, Q showed significant improvement.
>>> **Photo 6:** Q with Dr. Chantal Rothschild after treatment.
>>> **Photo 7:** One year after treatment, Q is healthy and fully recovered.



Treatment and prognosis

Once the disease is diagnosed, the treatment is fairly specific and effective, and with treatment, the outcome is generally good. In one study of 57 foals, the survival rate was 95 percent.⁴ But in a retrospective assessment of hospital cases in California and central Kentucky, 15 to 20 percent of foals during recent years did not survive.⁴ It's generally older foals that have complications, like renal failure or GI tract translocation, and become septicemic, says Pusterla.

He recommends a seven- to 10-day course of antibiotic therapy, unless there's evidence of GI translocation, in which case a longer duration may be necessary. If the gastrointestinal barrier is disrupted, it's possible that an enteric organism can enter the blood stream and lead to septicemia.

Although antibiotics are important for recovery, supportive care is key to a successful outcome, too. "Most people believe that it's antibiotics that save the foal, but the reality is that supportive care is important, too," he

says. "This is an organism that will invade the small intestine, but eventually it will be eliminated."

He also emphasizes the importance of rest and an easily digestible diet. If the animal is depressed and severely hypoproteinemic, colloids are recommended and can be found in plasma.

Prevention

Similar to monitoring foals for *Rhodococcus equi*, performing routine physical evaluations and blood work on a regular basis can prove helpful, especially when looking at trends of serum protein concentration. When infected with EPE, foals will become hypoproteinemic even before they develop clinical disease. Pusterla points out that it's also necessary to test for antibody levels and see if foals have been exposed.

For those who do not want to do careful monitoring, vaccination is recommended. There is a swine vaccine for *L. intracellularis* that has been shown to be safe and prevent disease in experimentally infected foals.

Q's will to survive

Since his recovery, Q has done very well. "He's six inches taller, his coat is really silky and he's strong and active," states Rothschild. "He went back to the horse he should have been."

Rothschild recognizes that there are some patients that just really want to live—and Q was one of them. "He never gave up even though his condition was quite severe and his disease quite advanced," she continues. "He just wanted to get better."

Visit acvim.org/PetOwners/AnimalSurvivor.aspx for more on Q's story of survival. **dvm360**

References

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Ed Kane, PhD, is a researcher and consultant in animal nutrition. He is an author and editor on nutrition, physiology and veterinary medicine with a background in horses, pets and livestock. Kane is based in Seattle.

from



Equine veterinary MEDICAL UPDATES

Cornell equine expert holds 'Equine news hour,' brings veterinarians up to date on new research, therapies. *By Kristi Reimer*

Thomas Divers, DVM, DACVIM, DACVECC, of Cornell University College of Veterinary Medicine, offered CVC Kansas City attendees a sampling of research and practical developments that can aid equine veterinarians with their patients.

Fecal transfaunation

A new therapy that has been used with a 90 percent success rate in human medicine has also been used successfully in horses with diarrhea under Divers' supervision at the Cornell veterinary hospital. In this procedure—called “bacteriotherapy” in human medicine—a fecal sample is obtained from a healthy, *Salmonella*-free donor horse, diluted with water and transmitted into the ailing horse via tube. Horses (and people) treated in this way can have normal feces the next day. The procedure is most successful in treating diarrhea associated with *Clostridium difficile* or antibiotic-associated GI upset, Divers says.

Cryotherapy and laminitis

Divers is extremely enthusiastic about using ice to prevent laminitis in toxemic horses. “We know that it works,” he says. He adds that it's important to use crushed ice—not cubes, which can stick to the skin and cause dermatitis and cellulitis—mixed with water to form a slurry. This mixture is held in a 5-liter bag or specially designed boot that wraps around the horse's foot. Testing has shown that the hoof stays cold for up to an hour after the ice is removed, Divers says, so if a horse steps out of the boot or the bag falls off, “it's not an emergency.”

Coronavirus outbreaks

In the fall of 2011 and spring of 2012, coronavirus-associated disease broke out in adult horses in four states—California, Texas, Wisconsin and Massachusetts—causing pronounced anorexia, fever and, in some horses, diarrhea. The outbreaks were notable because coronavirus typically causes problems in foals rather than adult horses. Although researchers describe the disease, which is transmitted via a fecal-oral route, as “self-limiting,” two horses did die, Divers says.

Foal diarrhea testing

A 10-disease PCR test manufactured by IDEXX has been used to test the feces of neonatal foals with diarrhea, Divers says. Findings by researchers suggest that, while coronavirus infection does not necessarily cause clinical disease on its own, when combined with other pathogens such as *Cryptosporidium* species, it does. This means co-infection may be a possibility in many instances of diarrhea.

Analgesia

Divers says he and others have realized that meloxicam is well tolerated and highly effective for pain control in horses. “It's not approved for horses, but it's been tested, so we know the pharmacokinetics,” Divers says. “It's got a nice ratio of COX-1 and COX-2 inhibitors, and the oral form is generic and reasonably priced.” Divers says that the drug is well-tolerated in horses and shows no evidence of causing damage to the stomach. [dvm360](#)



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Wild horse population projected to reach catastrophic levels

If left unmanaged, the size and cost of western herds would lead to a veritable horse-ageddon.

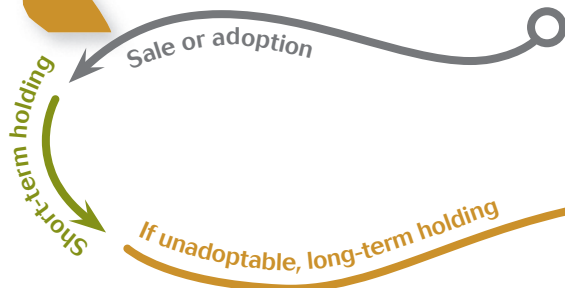
45,000



Since the National Wild Horses and Burros Program was enacted in 1971, the BLM has removed **195,000** horses from public lands.

Horses removed from federal rangelands currently residing in short-term and long-term facilities. Animals are moved from public lands to prevent overcrowding and destruction of the rangeland environment.

The number of “free-roaming” horses in captivity now exceeds the number on the rangeland.



Life expectation
15 years

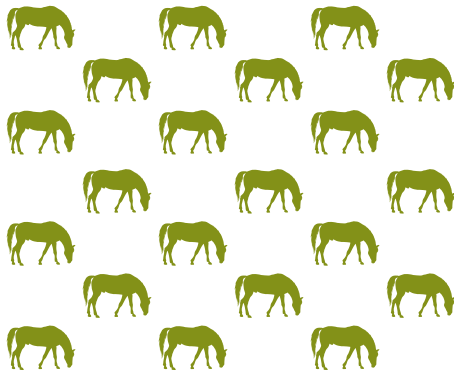
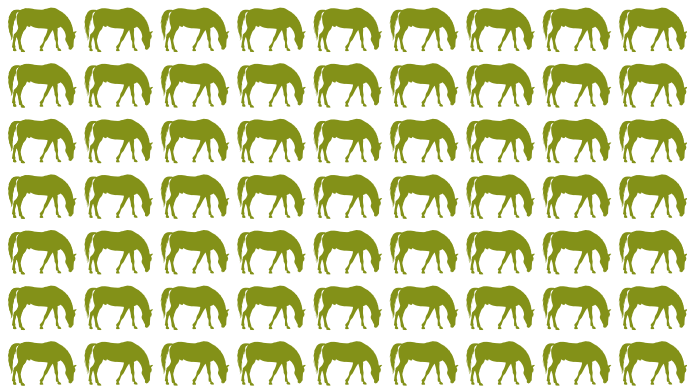
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A captivity cost of

\$1 mil
for every
62 horses

33,000

The population of western horse herds **increases 15-20% annually.**



Experts estimate this annual population increase could be **HALVED** by means of **contraceptive vaccines.**

Commissioned by the U.S. Bureau of Land Management (BLM) to study the effectiveness of efforts to manage the wild horse population on western lands, a National Research Council (NRC) committee published its report, "Using Science to Improve the BLM Wild Horse and Burro Program: A Way Forward," in the National Academies Press this spring. The committee concluded that the program's current practices are unsustainable.

The committee, chaired by Guy H. Palmer, DVM, PhD, director of the Paul G. Allen School for Global Health at

Washington State University, says that if processes go unchanged and trends continue, the American West could see the number of horses double in four years and triple in six years. The long-standing practice of removing horses to long-term holding facilities to manage rangeland numbers does nothing to control the high population growth rate, the NRC committee says.

"No one really wants to see more horses in long-term holding," Palmer says in a National Academies video. "This is not the vision of what the public wants to see with horses on these wild lands."

The committee wants to eliminate the need for long-term holding facilities. The first step? Collecting better data, Palmer says. Program directors need to understand exactly how many free-roaming horses there are so they can, one, protect the animals' health, and two, assess the impact of population control strategies, he says.

One such strategy is to implement widespread and consistent fertility control. The committee identified three methods in particular—porcine zona pellucida (PZP) and GonaCon for mares and chemical vasectomy for stallions. Robert A. Garrott of Montana

State University and Madan K. Oli of the University of Florida, authors of *Science* magazine's "A Critical Crossroad for BLM's Wild Horse Program" (August 2013) note that contraception would only reduce, not stabilize or reverse, population growth. Therefore they suggest removal of horses from public lands will have to increase in the short term. "If a gather-and-removal effort reduced the western horse population to the BLM's goal of 23,622 horses and aggressive contraception treatment was initiated, then BLM need only remove 2,000 to 3,000 horses annually to maintain its goal," the article states.

That level of removal would more closely match adoption demand, theoretically eliminating the need for long-term holding facilities.

"If the horses just continue to grow regardless of how much rangeland is allocated to them, in the end, two things are assured to happen," Palmer says. "The rangeland loses its quality—it's actually destroyed for use for other wild animals—and the other problem with that is that, eventually, the horses themselves will become ill and unthrifty due to inadequate feed and inadequate access to water."

The National Wild Horse and Burro Advisory Board accepted most of the committee's findings, although discussion will continue over preferred methods of fertility control. Both entities agree that change is imperative. **dvm360**

PROGRAM COST

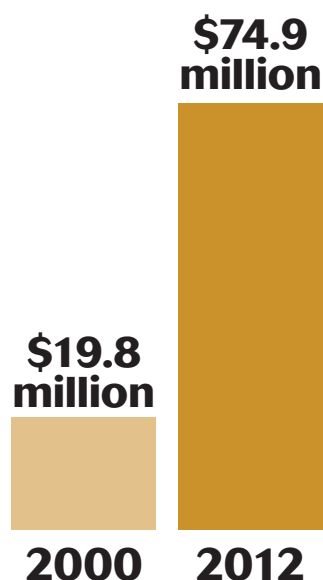
Capture and remove animals from public lands

Adoption programs

11%

10%

60%
Maintain
captive horses



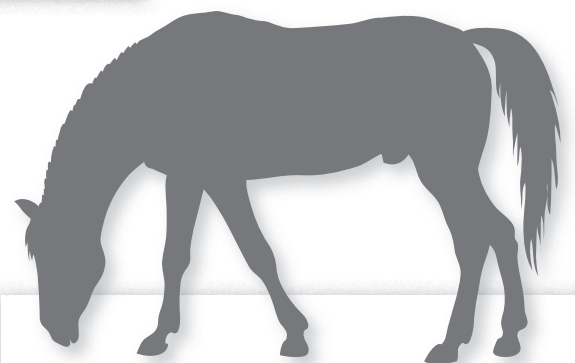
**\$1.1
BILLION**

If the National Wild Horse and Burro Program goes **UNCHANGED** and trends continue, the program will cost approximately \$1.1 billion from 2013 to 2030.

To achieve a manageable population, **removal** of free-roaming horses will have to **increase**.

23,000

If the wild horse population on public westlands can be **reduced** to approximately **23,000**, contraceptives plus adoptions could keep numbers at a **sustainable level INDEFINITELY**.



But, because of **funding restraints** and **lack of capacity** for captive animals, the Bureau of Land Management will substantially **reduce scheduled removals** of horses from public lands this year.



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UF professor arrested for secretly recording female veterinary students

Veterinary school's Samuelson charged with four felony sex offenses. *By Julie Scheidegger*

Arrested Sept. 4, University of Florida College of Veterinary Medicine professor Don A. Samuelson, MS, PhD, 65, confessed to secretly viewing and recording video of female students for his amusement, entertainment, sexual arousal or gratification. A search warrant executed Sept. 6 at Samuelson's office revealed a camera pen with an integrated USB thumb drive on which the recordings were stored.



Don A. Samuelson

The arrest report states that on or about April 10 and on or about April 17, Samuelson intentionally used an imaging device without the victim's knowledge or consent to view her body or undergarments. The device was directed toward the gap between the student's chest and the V-neck of her shirt. On or about June 6, Samuelson again used the imaging device to record a student's chest area. On Aug. 30, the arrest report alleges, Samuelson again recorded video of a student's chest area and upper inner thighs normally concealed by her dress.

Samuelson claimed ownership of the camera pen after it was found in his office at the college. The videos were made at the UF College of Veterinary Medicine without the consent or prior knowledge of the victims. The woman recorded Aug. 30, however, became aware of the videotaping as it occurred, prompting the investigation.

Samuelson is presently charged with four counts of sex offense, two involving video voyeurism and two involving attempted video voyeurism. The charges are third-degree felonies in the state of Florida and involve potential imprisonment of up to five years and a fine of up to \$5,000. More charges may be forthcoming as the investigation continues.

Samuelson was released on bond shortly after his arrest, and the university placed him on administrative leave Sept. 6. **dvm360**



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It's time to break through the glass wall that stands between veterinary practitioners and clients. Ditch the excuses and make client communication a top priority in your clinic.

A good friend of mine recently reminded me of a classic if obscure animal behavior experiment called the "Pike Study." Without going into great detail (you can see a video on YouTube, naturally) the study involved northern pike fish, some of the most aggressive and voracious feeders in North American waters. In the study, the pike could see but were repeatedly denied access to their favorite food: minnows. A glass barrier between the pike and the minnows led to constant and repeated frustration during the pikes' feeding attempts, and eventually they gave up. Not too surprising.

But something remarkable happened after the removal of the glass barrier, which allowed the pike and minnows access to one another.

"Golly, Mike, what happened next?"

you ask. Well, let me tell you.

Nada. Nichts. Rien. *Nothing*. The minnows went about their business; the pike ignored them. In one report the pike actually starved to death in the presence of food swimming around. I can't help but wonder what the minnows thought. Did they swim around playing "Duck, Duck, Goose" with the pike, or did they simply accept their presence as the new norm?

You might be wondering why this would interest you—assuming you're not a northern pike activist. When I read the study I thought, "Are veterinarians victims of the Pike Syndrome?" Think of the minnows as veterinary clients and service opportunities. The pool that is our practice is stocked with clients, opportunities and service options. They flutter around and we want to reach them. Now, veterinar-



>>> Like the fish in the "Pike Study," service opportunities are swimming all around us. Communicate with clients so you can catch those chances before they're gone.

ians are certainly not opportunists or predators; however, we do rely on our clients for energy and encouragement to keep us offering and providing all we are capable of.

Much like the glass partition that kept the pike away from their food, self-imposed glass barriers often separate us from our clients.

"I've had that discussion about parasites. My clients aren't interested."

"I've talked to them about obesity. They don't listen."

"My clients can't afford senior pet wellness screening."

"I've already tried—my clients don't want nutrition counseling."

"I don't believe in laser therapy."

A thousand pieces of glass that we perceive as a solid sheet stand between them and us. Veterinary clients and their pets come in and out, and we focus so intently on the "glass" that we fail to provide or advocate for things we should.

How often do you discuss weight management? How often do you advocate for appropriate vaccinations based on a risk assessment of patient lifestyle? How many of your patients are on year-round heartworm and parasite prevention and control? How many of your patients have regular testing of blood parameters?

We start making assumptions about others, and soon those assumptions become a glass wall. It becomes an excuse for not asking, not advocating and not even trying. The glass wall against which all of us have bumped our noses has resulted in us believing wrongly that each and every client, each and every patient is not an opportunity to serve and provide. The glass wall exists in our minds. Every client is an *n* of one and must be provided with information, service and value. We must assume they want the best.

Many in our profession are currently like those poor pike—hungry, disenchanting, surrounded by opportunity but afraid to bump their noses, afraid to be told no. Some of our colleagues will surely starve surrounded by plenty.

I routinely hear people say "Most of my patients ..." or "We usually ..." Veterinarians offer their absolute best pet care recommendations much of the time, but they are neither consistent nor persistent. We must be sure that *all* clients are offered the best options *every time* they bring their pets

in for care. To *usually* offer the best to *most* of our clients is not good enough.

As Joe Calloway said in *Becoming a Category of One: How Extraordinary Companies Transcend Commodity and Defy Comparison* (Wiley, 2009), "Every time we fail to 'do it right' we have to start again."

So break through that glass wall.

Put yourself out there in the interest of your clients, your patients and your veterinary practice. **dvm360**

Dr. Michael Paul, @mikepauldvm on Twitter, is a nationally known speaker and columnist and the principal of Magpie Veterinary Consulting. He lives in Anguilla in the British West Indies.

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Jorgensen Laboratories Limb brace for dogs

Jorgensen Laboratories has released the Vetexos CCL Brace, a new limb brace for dogs undergoing canine cruciate ligament (CCL) procedures. The modular design of the brace allows for a custom fit at a cheaper cost than a custom brace. The brace can be used repeatedly on other patients once the foam inserts are replaced. It can also support non-injured limbs after surgery or be used on the surgically repaired limb for recovery and support.

For fastest response, visit JorVet.com



Elanco Transdermal fentanyl solution for dogs

Elanco's Recuvyra, a new transdermal solution for dogs, contains fentanyl and is approved by the Food and Drug Administration for the control of postoperative pain in dogs. A single dose (1.2 mg/lb) applied to the dorsal scapular area of dogs prior to surgery controls pain for four days. In clinical trials, 98.4 percent of dogs treated with Recuvyra received effective pain control in orthopedic and soft tissues surgeries (as measured by the Glasgow Pain Scale).

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Bimeda's ClindaMed, an antibacterial oral drop, treats a variety of disease conditions in dogs and cats. In dogs, the product treats skin infections, deep wounds and abscesses, dental infections and osteomyelitis due to specific organisms. In cats, it treats skin infections, deep wounds and abscesses, and dental infections also caused by specific organisms. Each milliliter contains clindamycin hydrochloride equivalent to 25 mg clindamycin.

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Elanco Topical feline flea solution

Elanco has released Cheristin for Cats, a once-a-month topical solution for the prevention and treatment of flea infestations. Cheristin starts working in just 30 minutes and, in a controlled study, killed 100 percent of fleas in 12 hours. Cheristin uses the active ingredient spinetoram, which alters the function of nicotinic and GABA-gated ion channels to kill fleas.

For fastest response, visit elanco.com or cheristin4cats.com



IDEXX Laboratories Interactive client education tool

IDEXX Laboratories has partnered with Medi-Productions SAS to release Pet Health Network 3D, an interactive tool veterinarians and their teams can use to educate clients using vivid three-dimensional anatomical animations, radiographs and instructional home care videos. It is available as an iPad app or a Web-based application. Pet Health Network 3D provides a library of species-specific content that spans relevant medical topics including dental, cardiovascular, skeletal, joints and reproduction as well as preventive and home care.

For fastest response, visit idexx.com



Vetnique Labs Oral anal gland supplement

Vetnique Labs introduces Glandex for dogs and cats, an oral supplement designed to treat anal gland problems in dogs and cats. Glandex provides anal gland and digestive support and helps pets maintain healthy anal glands by producing bulky and firm stools to help the anal glands empty naturally. It also contains key ingredients to target the underlying inflammation and allergies that trigger anal gland problems. Glandex contains a fiber blend, natural anti-inflammatories and a probiotic. It is formulated as a highly palatable once-a-day powder.

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IDEXX Reference Laboratories Equine respiratory panel

IDEXX Reference Laboratories has released the IDEXX Comprehensive Equine Respiratory RealPCR Panel with tests for five new pathogens: equine rhinitis A and B viruses, equine herpesvirus types 2 and 5, and equine adenovirus. These are in addition to the tests in the original panel, which include equine herpesvirus types 1 and 4, *Streptococcus equi* subsp. *equi* and equine influenza virus. The option to add a test for equine arteritis virus is also available. The Comprehensive Equine Respiratory RealPCR Panel provides a convenient, economical way to quickly and accurately test for nine of the most common equine respiratory pathogens.

For fastest response, visit idexx.com



Hemopet Food sensitivities test

Hemopet's new salivary-based test, NutriScan, reveals latent and delayed food sensitivities to the 24 most commonly ingested foods by cats and dogs. Unlike serum-based IgE or IgG protocols, which test for uncommon food allergies, NutriScan tests for food intolerance—the third most common sensitivity condition in dogs and cats. It measures the IgA and IgM antibodies released in gastrointestinal mucosal secretions. This assay system utilizes salivary diagnostics that can more accurately identify foods to avoid instead of focusing on those less likely to be reactive.

For fastest response, visit nutriscan.org



Redcort Software Time clock software

Redcort Software has released Virtual TimeClock '13 Release 2, which saves busy veterinary employers time and money with enhanced overtime, importing and overnight shift handling features. More than 12 new reporting enhancements provide ways to easily summarize team member activities, hours and overtime. Virtual TimeClock '13 Release 2 also includes a timecard report that neatly summarizes a team member's daily time and activities on a single line.

For fastest response, visit
redcort.com/timeclock



Henry Schein Animal Health Orthopedic instrument catalog

Henry Schein Animal Health has launched its first veterinary orthopedic instrument catalog. The catalog includes more than 3,000 general and orthopedic-specific products plus veterinary instrumentation, educational materials, and information about the latest technology solutions and value-added services designed to help practitioners operate the most efficient practices.

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IDEXX Reference Laboratories Fructosamine test

IDEXX Laboratories has added fructosamine testing to its test menu for the Catalyst Dx Chemistry Analyzer. With a single fructosamine slide, veterinarians can get average blood glucose levels for the previous two to three weeks using just one blood sample with results available during the client visit. When run in support of glucose curves, fructosamine testing with the Catalyst Dx analyzer provides a more complete view of patient health.

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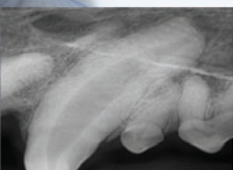


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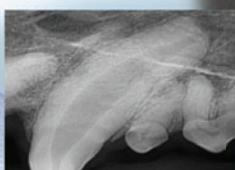
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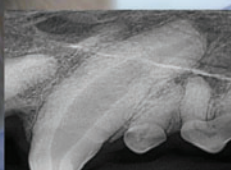
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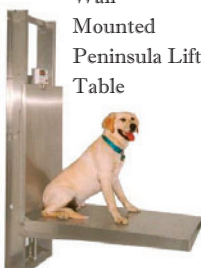


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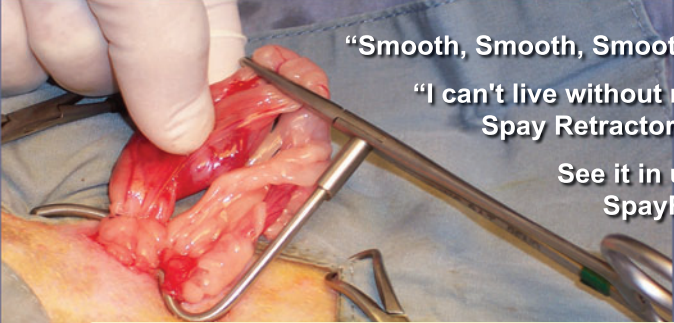
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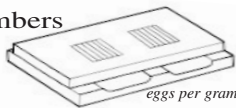
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15. Extent and Nature of Circulation		
A. Total Number of Copies	46,209	45,579
B. Legitimate Paid and/or Requested Distribution		
1. Outside County Paid/Requested Mail Subscriptions Stated on PS Form 3541	31,735	31,122
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4. Requested Copies Distributed by Other Mail Classes Through the USPS	0	0
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1. Outside County Non-requested Copies Stated on PS Form 3541	13,741	13,833
2. In-County Non-requested Copies Stated on PS Form 3541	0	0
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4. Non-requested Copies Distributed Outside the Mail	467	285
E. Total Non-requested Distribution (Sum of 15d (1), (2), (3) and (4))	14,208	14,118
F. Total Distribution (Sum of 15c and e)	46,013	45,302
G. Copies not Distributed	196	277
H. Total (Sum of 15f and g)	46,209	45,579
I. Percent Paid and/or Requested Circulation	69.12%	68.84%

- ☐ Total circulation includes electronic copies. Report circulation on PS Form 3526-X worksheet.
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Christine Shappell

Date: 9/30/13

I certify that the statements made by me above are correct and complete.



STAMPEDE | Bo Brock, DVM



Introducing **screw-down** medicine

Better tell your clients to hold on for their life after you administer this kind of injection.

I was in the other room but I recognized the voice immediately. “Where is that young veterinarian? I need to have a word with him! He gave my horse a shot of *screw-down* medicine and I didn’t know it!”

It was Skeet Black, a 78-year-old retired ranch foreman. And the young veterinarian he was looking for? Yeah, that was me. Great.

When he saddled up again the critter took off so fast that he flew over the cantle of that saddle, bounced off her butt and landed straddling the fence that goes around the roping arena.

I’d only been practicing for about three months and it seemed like weeks would go by where everything I did was wrong. I was in the middle of one of those weeks when Skeet’s very distinctive cowboy voice came floating into the small animal surgery room where I was spaying a dog.

The patient was a 4-year-old Labrador in heat, and I was beginning to think I’d rather deal with jock itch on my own body than spay fat dogs. Now I had to shift my focus to the angry old cowboy. Why did he have to come in hollering at the very moment when my horrible surgery skills required my complete attention? And *screw-down* medicine? What the heck was that? I’d only been out of school a few months, but in my 350 hours of college courses, I’d never heard that term once. I had to think for a minute about what I’d done to his mare.

Bit by bit the story came back to me. After Skeet had retired he’d decided to take up team roping. He bought a

22-year-old mare that was a seasoned head horse and brought her to my clinic because she wasn’t coming out of the box fast enough and wasn’t turning quick enough to face.

My attention momentarily switched back to the bleeding Labrador. I was so frustrated that I tuned Skeet out for a moment until his next words penetrated the surgery room: “You say he’s doing a surgery? Well, I’m just gonna wait right here until he gets done. I need to have a word with that fella and I’m not gonna leave until I do.”

His voice rang with aggravation. Apparently I’d really ticked off this old rascal. All I’d done was inject his horse’s hock joints with some triamcinolone. She had bone spavin in those hocks, and I just wanted to give her old joints some relief so she could carry this 78-year-old fart up and down a roping arena without experiencing any pain. I figured this would make her go faster and feel better and everyone would be happy. I’d done it on horses before and everyone seemed to like it—except ol’ Skeet.

I finally finished up the wretched dog spay and knew I’d have to face Skeet shortly. My stomach was in knots, almost like when the teacher would send me to the principal’s office in the fifth grade.

Before I tell you what happened, let me paint a picture of ol’ Skeet. He’d been a ranch foreman for 50 years. He’d ridden horses for so long that the 40-inch inseam on his Levi’s 501s had a permanent bow in them. He wore long-sleeved shirts with those snap buttons that are completely out of style. His cowboy hat was so ancient and weathered that the brim had taken on the shape of a taco and the sweat ring extended up to the crown. His

boots came to a point and the leather was as thin as the skin on his giant earlobes. Last time he was in, he stood right in front of me while he rolled his own cigarette and smoked it. And this was the fella who was furious with me.

When I finally worked up the courage to open the door, I couldn’t believe what I saw.

There stood cowboy Skeet in a pair of Nike sweatpants and house shoes. He was leaning over a walker that was 7 inches too short for his long, lanky frame and he wasn’t wearing his false teeth, which made him look 95 years old instead of 78.

“There you are, you young rascal,” he said when he finally saw me.

“Let me tell you somethin’, young’un. I don’t know what you gave my mare, but it made her feel so good that she left me in the box when she took off.”

He said he’d stayed off the roping horse for three days just as I had advised, but when he saddled up again the critter took off so fast that he flew over the cantle of that saddle, bounced off her butt and landed straddling the fence that goes around the roping arena. Apparently the doctor had even said he was lucky to have any balls left after that spill.

“Now I got a hip that’s aching and have to use this walker thing for a month,” Skeet said. “I just come in to tell you that you better tell people to screw-down after you give one of them there shots. I am tellin’ ya, that critter can run fast and fart loud. Now don’t you forget it!”

That was nearly 25 years ago. Now, if you come to my clinic with a horse that needs its hock injected, don’t be surprised if I tell you, “Now when I give this to your horse, you better screw-down, cause this rascal is gonna run fast and fart loud!” **dvm360**

Dr. Bo Brock owns Brock Veterinary Clinic in Lamesa, Texas.

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I haven't needed an alarm clock
since Brody came along.

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